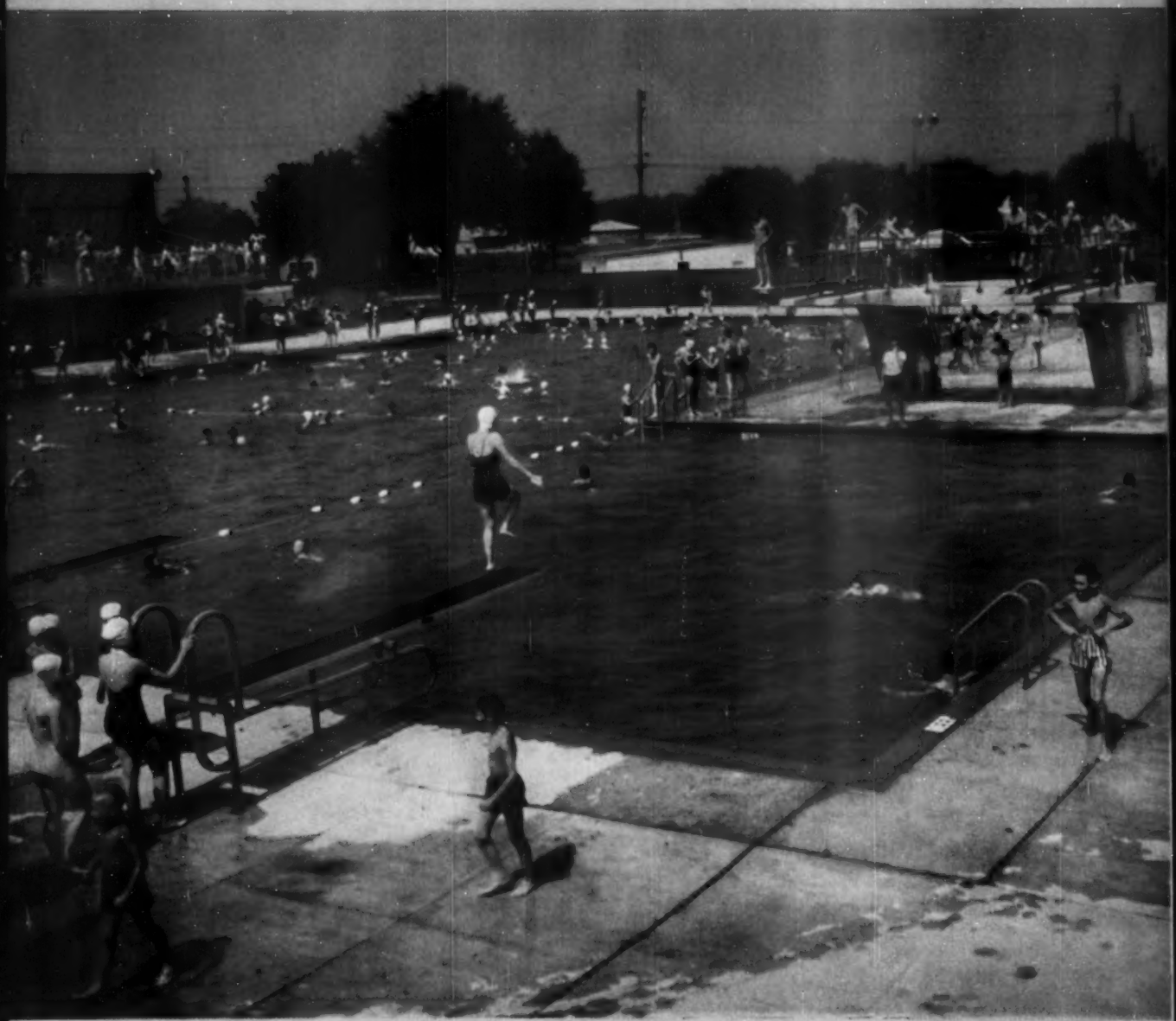
MAY 1958

The American City



Menasha, Wis. develops some distinctive ideas
in swimming pool design and develops city-wide community spirit
in making possible its construction.

See pages 3 and 118.

MAY 1958

Philadelphia solves a traffic problem

Roosevelt Boulevard, cutting diagonally across photo, is one of Philadelphia's chief traffic arteries and part of U. S. Route 1. Paved with Texaco Sheet Asphalt by the Union Paving Company, Philadelphia.

This is Roosevelt Boulevard, now a divided thoroughfare, which has three to six lanes serving traffic moving in each direction. The modern design of Philadelphia's new expressway has solved one of the city's most difficult traffic problems.

The pavement which has been constructed on Roosevelt Boulevard is Texaco Sheet Asphalt. This plant-mixed type of Texaco asphalt paving has demonstrated its rugged, easy-riding, skid-resistant qualities on hundreds of thousands of square yards of Philadelphia's streets. A large proportion of this paving has given years of service with a minimum of upkeep on some of the most heavily traveled thoroughfares of the nation's third largest city.

Your own community may require a heavy-duty pavement for its principal streets, an intermediate type of surface for moderately heavy traffic, or an inexpensive surface-treatment to give gravel streets a dustless, waterproof mat. There is a type of Texaco asphalt construction exactly suited to your requirements. Helpful information on the methods and materials recommended for all these asphalt types of street paving or surfacing is supplied in two free Texaco booklets. Interested city officials can obtain copies without obligation by writing our nearest office.

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REG. T. M.

TEXACO ASPHALT

ble its construction.

See pages 3 and 118.

MAY 1958

The American City

A Buttenheim Publication

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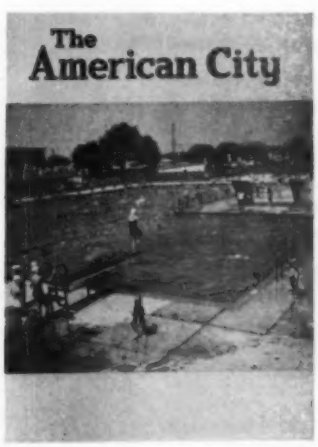

COVER PHOTO

To insure the construction of Menasha's (Wis.) new swimming pool, Mayor John Scanlon appointed a Citizen's Committee, selected to provide representation by management, industry, labor, commercial and civic groups. This functionally sound but decidedly non-standard pool is described in detail on page 118.

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The Three-way Benefits of Good Telephone Earnings

USERS EMPLOYEES INVESTORS

They benefit the telephone customer by providing the means to expand and improve the service and do it economically.

They benefit employees because they help to provide good jobs.

They benefit the investor by protecting his savings and insuring a good and secure return on his investment.

There is, indeed, no basis for the belief that keeping telephone earnings low is a sure road to keeping rates low.

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In all lines of business, it's the companies whose earnings are good that are able to make the best products, provide the best service, and give the best values.

BELL TELEPHONE SYSTEM

what's it worth **to have Maneuverability**

The American City Highlights

THIS MONTH, we decided to pinpoint some of the issue's more interesting articles—at least from our standpoint of gathering them for this issue. All have had their special aspects of interest and reflect the stimulating broad-gauge qualities of municipal government

FOR A SAMPLING, how ***Galesburg, Ill.*** is getting water today shows the bold, resourceful thinking that can characterize the smaller, independent cities (p. 105). The pedestrian plaza test by ***Springfield, Ore.*** (p. 112) shows how another little city decided to stop writing reports and take action. The ***Menasha, Wis.*** swimming pool story (p. 118) is noteworthy for its thoroughness and should convince everyone that you can put away the snow plows.

NEXT MONTH, if our plans materialize, we should have among our other stories a detailed and thought-provoking discussion on water-rate structures. This represents the work of Harris Seidel—one of those young leaders that the municipal field is constantly producing—doing his work in the small city of ***Ames, Iowa.***

AIR POLLUTION CONTROL will be discussed in a special section in future issues. We always have been impressed with the response that even small stories on air pollution control have generated in the past. We confidently predict that municipal planning studies in the future will include meteorological, or "air use" studies as well as land use. They could save a lot of headaches when a city zones for industry, or locates sewage treatment plants, incinerators, parks, or airports.

IN GENERAL, the nation is still wrestling with the problem of a "recession," and certainly the hysterical handling of it by the popular press is no example of good, objective journalism. While unemployment has risen to 6% or more, we shouldn't lose sight of other factors such as these:

- roughly 5% of all employed workers are holding two or more jobs.
- there are about 15 million more jobs today than there were in 1939.
- family income after taxes is at an all-time high, and individual savings are at their highest level—some $300 billion.
- the nation's urban areas have under way a strong program of construction in such fields as streets, water, sewage, urban renewal, and these can be expanded easily, to the benefit of the entire nation, if conditions appear to require it.

IN PASSING, we feel impelled to mention a really unnerving bit of information that landed in our editorial offices. A group of scientists, meeting at the University of California last month, announced that both the worm and insect resemble man in a number of essential respects. It worried us all month. If anyone is interested in the full discussion, we suggest asking the New York Academy of Sciences, 2 East 63rd St., New York 21, N. Y., for the proceedings of the conference on "Axenic Culture of Invertebrate Metazoa: A Goal."

Consulting engineers! See page 18 for **First News** of municipal projects on which the consulting engineer has not yet been appointed.

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Editorial

Law Day—U. S. A.

IN its ultimate sense, a municipal corporation is a bundle of legal powers. Everything that a municipality does must be authorized by law. Moreover, municipalities today undertake activities that are vast, complex, and unthought of a few years ago. Law has to keep step with the modern, ever-changing city.

Consequently, cities have reason to recognize the public service performed by President Eisenhower in proclaiming May 1, 1958, as "Law Day—U.S.A.". In doing so, he gave our cities an opportunity to pause and recognize the great and precious value of the law and its support of our system of government, which bases the law on the rights and privileges of the individual.

Viewed broadly, most of our present problems stem from disrespect of the law. Juvenile delinquency, the most heartbreaking trend in modern life, arises not from ignorance of the law, but from a wilful desire to ignore it — from the depressing fact that these misguided youngsters do not respect the law enough to obey it.

Traffic law violations, producing a tragic toll in snuffed out lives, in maimed and broken bodies, also do not stem from ignorance of the law. Traffic engineers go to persistent lengths to post the law clearly, so that traffic can move without leaving its bloody trail. Traffic violators know the law. Regretfully, they also choose not to obey it.

The law is not a fixed, rigid set of rules, but is living and dynamic, moving with the times. The law tries to spell out what is good—what supports the peace and welfare of our nation without infringing on the rights of the individual. Many times, the problem of determining what is good is perplexing and indistinct. How, for example, can you spell out, with unchallengeable accuracy, when the air over a city is polluted, and when it is not? How pure must a city's liquid wastes be before being discharged into a nearby river and cause no damage? How can we be sure that zoning ordinances are good? In these nebulous regions of municipal government, where man himself is unsure of what is "good", the law steps courageously forward and blazes a trail.

From the inception of our country, we, as a people, always have believed and lived by William Pitt's famous saying: "Where law ends, tyranny begins". That small fraction of our population which chooses to disrespect the law, shows the cost, misery, and ugliness that such an attitude brings.

Whether or not your city made plans for this special observance of May 1, 1958, THE AMERICAN CITY hopes that all municipalities will increasingly join in hastening the time when every day shall indeed really be "Law Day".

Mail Bag

"Weed Control" Urban Renewal

YOUR EDITORIAL advocates a sound and practicable remedy for alleviating in part the problem of deteriorating slum neighborhoods (Slums Need a "Weed Control Ordinance," April, p. 7). Legislation would probably be required to vest authority in cities and other local public agencies, and local budgets would have to be increased to cover this additional urban renewal activity.

Estimates of the cost of such repairs vary widely, but an average expenditure of $2,000 per dwelling unit is not high. Under an estimate, a revolving fund of $1 million would provide sufficient funds for repairs to 500 dwelling units. Repayments by owners for such repairs, deposited in the revolving fund, would help sustain the revolving fund. Moreover, the threat of repairs by the city might provide a modicum of stimulus which would induce owners to make repairs on their own account and with their own funds.

As you probably know, the Philadelphia Redevelopment Authority's Friends Redevelopment Project involved (1) the acquisition of private property by the Authority, (2) the

(Continued on page 221)

Refuse Collection & Disposal

A Partial Answer To the Scrap-Yard Burning Problem

This is an architect's rendering of a Smokatron unit for production auto burning as demonstrated in Atlanta, Ga.

A DEMONSTRATION held in Atlanta, Ga. late last year proved scrap-yard burning can be controlled and need not be an air pollution problem. The site—the J. T. Knight & Son scrap yard; the equipment—a Smokatron Production Auto Burner, manufactured by Summer and Company of Columbus, Ohio. The Smokatron is the first unit of any type, using a system of air pollution control, to be installed anywhere for the high production burning of automobiles.

The Knight unit consists of a combustion chamber or kiln 8 feet square by 80 feet long. The loading platform at one end and the discharge platform at the other are each 30 feet long. A double-chain conveyor, running the entire 140-foot length of kiln and platforms pulls the vehicles to be burned through the unit. Kiln and platforms are made entirely of 1-inch steel plate.

Both water sprays and electrical precipitation is employed for smoke-cleaning purposes. The gases pass from the combustion chamber through a number of intake manifolds to the precipitator towers. Each manifold contains several fog sprays that saturate the hot gases, thus putting into solution a substantial portion of sulfur dioxide, resulting from burning rubber and insulation material. The spray also reduces the temperature; and, hence, the volume and velocity of the gases. This eliminates the possibility of sparks coming from the precipitator towers.

The manifolds lead into distribution or plenum chambers containing a series of stainless steel perforated sheets to insure even distribution of the gases or smoke to each tube in the precipitator. The Knight unit contains 240 six-inch tubes, each 20 feet long. A nickel-chrome wire electrode runs down the center of each tube. These are thoroughly insulated from the rest of the equipment.

As the gases pass through the tubes, negative charges are imparted to each particle suspended therein. These particles are then attracted to the positively charged pipe walls, leaving a clean gas to be emitted from the stack.

In warm weather, no discharge will be visible from the precipitator towers. In cold weather a cloud of steam may condense around the top of the towers, but this is not objectionable.

Nonstop Sanitary Landfill

FIVE towns use the sanitary landfill operated by Highland Park, Ill. Refuse collected from the 60,000 persons in these towns last year came to about 100,834 cubic yards. In addition some 176,000 gallons of septic tank wastes were dumped at the site during the year.

Superintendent Floyd Bother states that, during operating hours, material keeps pouring in from the five towns at a steady rate, requiring constant operation. Consequently, work continues even in heavy rain or zero weather. Equipment at the landfill site consists of two International Drott TD-14 Bullclams and one TD-9 Skid-Shovel.

Snow and cold weather mean little to operators at the Highland Park, Ill. sanitary landfill. A steady stream of incoming refuse means constant operation during the working day.

New Garbage Collection System for Jackson, Miss.

MISSISSIPPI League of Municipalities reports that Jackson is installing a new system of garbage collection in the downtown area at the recommendation of Hugh Milstead, head of the city sanitation department.

Under this program, Dempster Dumpster units will be employed. The containers will be placed in downtown alleys and will be used as a mutual facility by downtown stores. Truck equipped with a hoist-haul system, lifts contents mechanically.

THE NEW MODEL "800" SEWERKING—LONG DISTANCE OPERATION—IDEAL FOR THREADING BUCKETS

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- **"Cuts fuel and labor costs!"**
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These statements about Cat Motor Graders were made by public officials from different sections of the country. They hold real significance for every one responsible for the purchase of equipment, because they highlight the importance of figuring *total cost* when buying a machine. Total cost, or last cost, covers what you pay for a machine . . . how much work it does for you . . . what you spend on it for operation and maintenance . . . how much it can bring you when you trade it in. Public records prove that on *low total cost* Caterpillar Motor Graders are the best investment in the field!

There's good reason. From the ground up, Cat Motor Graders are built to do *more* work at *lower* cost with *less* down time than any other make. Here are a few of many features that make the No. 112 and the larger No. 12 standouts for performance:

1. **Mechanical controls** that are fast, dependable and accurate—with the new Preco Automatic Blade Control available on either model.
2. **A Caterpillar Diesel Engine** that burns low-cost fuels without fouling—and a fuel system that requires no adjustment.
3. **Long radius, curved side shift rack** that allows a full range of blade positions without changing the links or adjusting the blade.
4. **Tubeless tires,** a Caterpillar exclusive, that reduce tire down time as much as 80% by eliminating tubes and flaps.

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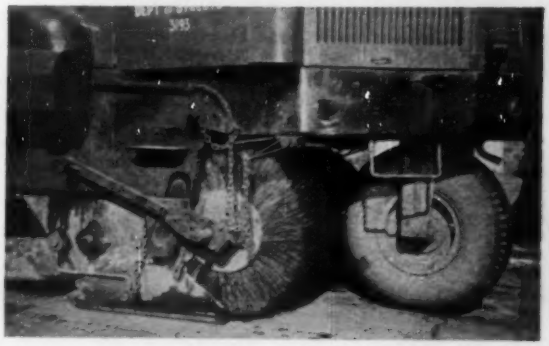
Street Construction & Maintenance

Longer Broom Life With Man-Made Bristles

Left:
This broom of "Tynex" nylon monofilament had a service life of 3,692 sweeping miles.



Right:
One of Philadelphia's Wayne sweepers equipped with a broom made of nylon bristles.

TESTS started last fall in Philadelphia, show that man-made fibers for mechanical sweeper brooms far outlast standard vegetable fibre. The sweeper operators also reported that the new brooms picked up all kinds of litter, from fine silt to whole bricks, with ease. They also found them useful for snow removal.

The material being tested is duPont's "Tynex" nylon monofilament. Test brooms of this filament swept about 4,000 miles before rebristling was needed. Approximately 150—200 miles is the average life reported for vegetable-fibre brooms.

Operation under varying climates, changing sweeping speeds and pressures, differing soil characteristics and degrees of driver experience showed generally uniform results with both cable-wrap and strip brush construction.

Tests on cable-wrap construction showed an average wear rate of about one-inch for every 600 miles. Twenty-six-inch cuts of 75-mil Tynex nylon monofilament yielded brooms with 12-inch trim having a useful length of 7 inches.

Strip brush construction require 24-inch cuts that also yield a 12-inch trim. One strip brush tester for 632 sweeping miles was worn 0.81 inches. Another broom, made up of 20 strips, gave satisfactory results for 1,187 miles of severe service while wearing out about 2.3 inches.

A cable-wrap construction test broom used in P. iladelphia lasted for 3,692 sweeping miles, or about 150 days of constant sweeping compared to only a few days for imported vegetable fibre. Thus, many rebristlings were eliminated.

Although initial costs will be higher, the long service life and low maintenance cost of man-made bristling indicates substantial savings. Other advantages are availability when needed, freedom from deterioration in storage, and the elimination of the need for presoaking.

World's First Aluminum-Girder Highway Bridge

IOWA is breaking precedent by building a welded aluminum bridge. The bridge, being constructed near Des Moines by the Iowa Highway Commission, will carry traffic across a four-lane interstate express highway. It will cost $124,700.

The four-span continuous aluminum girder structure with composite reinforced concrete deck will be 222 feet long, 36 feet wide with a 30-foot roadway, and will be supported by concrete piers. Roadway support consists of four continuous longitudinal girders spaced 9½ feet apart. The girder and diaphragm system, primarily of welded-plate construction, takes full advantage of high-strength weldable aluminum alloys. The concrete deck will be tied rigidly to the girders with aluminum shear connectors to achieve composite action.

Ned L. Ashton, consulting engineer of Iowa City, designed the structure under the direction of the Iowa Highway Research Board and the State Highway Commission. The bridge is a developmental project under the sponsorship of the Iowa Highway Commission and the nation's three major producers of aluminum, Aluminum Company of America, Kaiser Aluminum & Chemical Corporation, and Reynolds Metals Company. It is designed for H-20-S16 loading in accordance with AASHO specifications.

The Pullman-Standard Car Manufacturing Company of Chicago will handle the aluminum fabrication. Site preparation is under way and the bridge is scheduled for completion next summer.

Advantages

In addition to eliminating costly maintenance, it is anticipated that the project will demonstrate structural and fabrication advantages of aluminum that will open the way to a broader use of the light metal in the nation's highway construction program.

The design is such that a portion of the concrete slab becomes a part of the structural member, permitting a reduction in aluminum weight.

Another advantage anticipated is reduction in field-assembly and erection operations. Plans call for all welding to be done in the shop. The girders will then be transported to the site in sections, elevated into position and then bolted together.

WILL YOUR NEXT WATER TANK GIVE YOUR COMMUNITY THESE PROTECTIVE ASSURANCES?

. . . It will, if it is CB&I-BUILT . . . of welded STEEL construction.

It's easy to take steel for granted. Evidence of its workability and durability can be seen anywhere, anytime, any place. But its *particular* dependability as a material of construction for water storage structures reaches beyond the commonplace.

Here is why *CB&I* uses steel; why most *consulting engineers* specify steel; and why more water for municipalities is *stored* in steel than in any other material of construction:

CB&I STEEL TANKS are built to AWWA Specifications—To a factor of safety established by the collective experience of the best engineering knowledge available on the subject of water storage.

CB&I STEEL TANKS ARE "Tight"—A fact that is accepted without question even *before* the structure is fabricated and erected.

CB&I STEEL TANKS are flexible—to provide only specified *known* amounts of differential settlement, which do not affect the utility or safety of the structure.

CB&I STEEL TANKS are stable structures. There is no loss in effective strength of material with the passage of time.

CB&I-BUILT STEEL TANKS are the *responsibility* of CB&I through all phases of design, fabrication and erection. Almost 70 years of engineered *craftsmanship in steel* back every structure. This is your assurance of predictable maintenance costs and long service life.

Be *glad* you can take steel for granted. When your community next considers water storage, remember, *only* steel can *assure* you long term, low maintenance storage —because it is backed by the accurate control and protective assurances established by the American Water Works Association.

Write your nearest CB&I office for further details. Ask for the new bulletin: *Next Door Neighbor to Millions.*

Above: A 2,500,000-gal. Hortonspheroidal elevated tank blends attractively with landscape at Cincinnati, Ohio.

Below: 10,000,000-gal. Horton® reservoir helps to supply increased water needs at Spokane, Washington. Structure is 240-ft. in diameter.

Cooperating with the *Water Resources Council* program.

CB&I

Chicago Bridge & Iron Company

Atlanta • Birmingham • Boston • Chicago • Cleveland • Detroit • Houston • Kansas City (Mo.)
New Orleans • New York • Philadelphia • Pittsburgh • Salt Lake City
San Francisco • Seattle • South Pasadena • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY, GREENVILLE, PA. and at NEW CASTLE, DELAWARE.

—Water Supply & Treatment

Flow Tests on Supply Main Show Average "C" Value of 144

Friction flow test made on five-mile pipeline using four rates of flow

A 5-mile pipeline carries water from Cleveland's new treatment plant to a 2-mg reservoir.

By DEWEY J. JOHNSON
Research Engineer
Cast Iron Pipe Research Ass'n.

RECENT tests on ***Cleveland, Tennessee's*** new water main show high carrying capacity. Several years ago, this city placed into service an entirely new source of supply consisting of an intake line, filtration plant, supply main to the city and a large steel reservoir that floats on the line. (THE AMERICAN CITY, July 1956, p. 136, "Two Water Sources Needed.") The water comes from the Hiwassee River, 12 miles northeast of the city.

About 24,600 feet of 20-inch cast-iron main carries the water from the river to the new filtration plant located approximately halfway to the city. After filtration, high-service pumps pump the water through 31,400 feet of 20-inch cast-iron pipe to the 2,000,000-gallon steel reservoir located on a hill overlooking the city. From here it flows by gravity to the distribution system.

The raw water receives conventional treatment by coagulation, sedimentation, filtration and disinfection. The pipeline recently tested carries only finished water having the following analysis:

Hardness—	48 ppm (parts per million)
CO_2—	0 "
Alkalinity—	19 "
pH—	8.4

A view of the cast-iron pipe at the time of installation, showing the smooth surface of the cement lining.

Friction flow tests were conducted on the 31,400-foot section of main between the filtration plant and the storage reservoir. This afforded a good stretch of main. The pipe is cement-lined, has a net diameter of 19.8 inches, a lining of 3/16-inch thickness and is seal-coated. The tests were conducted by Cleveland's Water Superintendent, Ellis L. Spencer and two engineers from the Cast Iron Pipe Research Association.

The necessary quantities, such as

(Continued on page 162)

TABLE I

Cleveland, Tenn., Friction Flow Test, September 7, 1957
Pipe Diameter 19.8 inches—I.D.—Cement Lining of 3/16 inch Seal-Coated—Laid in 1955—Age: two years

Flow GPD	Distance		"C" W&H Factor
2,020,000	31,400 feet		138
2,600,000	31,400 "		144
2,750,000	31,400 "		142
2,930,000	31,400 "		153
		Average	144

EDITOR'S NOTE: The author will be glad to send a hydraulic slide rule free to readers who request it. Address: Cast Iron Pipe Research Association, Suite 3440, Prudential Plaza, Chicago 1, Ill.

COSTS LESS TO BUY

A single, molded rubber gasket is the only accessory required. There are no bolts, no nuts, no followers, no couplings, no extras.

COSTS LESS TO INSTALL

Assembly is easy and rapid. Rate of installation usually is limited only by the speed of excavating the trench.

JOINT IS TIGHT

Bell-Tite forms a pressure-tight joint instantly. Restrained joint bursting tests prove joint stronger than the pipe itself.

This is it... CLOW® Bell-Tite Joint Cast Iron Pipe

ALL-WEATHER JOINT

You keep your schedules with Bell-Tite Joint cast iron pipe. It can be easily laid in a wet trench or even under water.

UNDERWRITERS' LISTED

All diameters through 24" listed and inspected by Underwriters' Laboratories, Inc. for working pressures to 350 psi.

AMPLE DEFLECTION

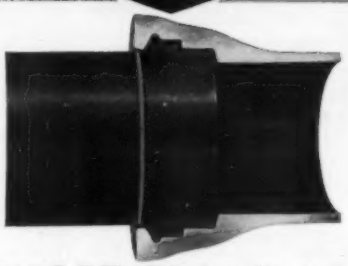
Bell-Tite Joint cast iron pipe is so designed that it will easily accommodate casual curves and normal grades.

MEETS ALL REQUIREMENTS

CLOW Bell-Tite Joint pipe is strong, tough, uniform and durable cast iron pipe for long-life underground service.

ANY SIZE OR THICKNESS

Available in any specified thickness or weight class in accordance with ASA, AWWA or Federal specifications. 3" to 24".



CLOW Bell-Tite Joint is easily assembled—Just wipe clean, lubricate and push spigot into the bell. When painted yellow stripe is no longer visible, joint is bottle tight.

ENTHUSIASTIC RECEPTION

Contractors and Municipalities—men who know pipe—have installed well over 1,000,000 feet of CLOW Bell-Tite pipe.

CLOW 1878 ®

JAMES B. CLOW & SONS, Inc.

201-299 North Talman Avenue, Chicago 80, Illinois

Subsidiaries:
Eddy Valve Company, Waterford, New York
Iowa Valve Company, Oskaloosa, Iowa

Sewerage & Sewage Purification

Ohio River Purification Shows Progress

THE Ohio River Valley Water Sanitation Commission's ninth annual report shows a significant measure of accomplishment in the area of stream pollution control by the states of Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, and West Virginia. B. A. Poole of Indianapolis, Ind., Chairman of ORSANCO, points out that when the interstate regulatory agency was established in 1948 existing sewage purification facilities served less than one out of every 100 persons along the Ohio River. Today municipal sewage purification facilities, to serve 86 of every 100 people along the Ohio River, are now in operation or being completed.

Progress has also been made on the 19 major tributaries of the Ohio. Purification facilities serving 7,600,000 of the 10,000,000 urban inhabitants of the valley are now operating, or will be placed into operation, as fast as construction contractors can complete them. The eight states have also approved final plans for facilities to serve another 1,100,000 persons.

Industrial Waste Control

Controlling industrial waste pollution offers the biggest task before the Commission. Today 1,431 industrial plants, some the largest of their type in the world, discharge effluents directly into the streams of the district. During the past four years the number of industries providing adequate treatment has grown from 323 to 717.

Additional safeguards for Ohio Valley water resources outlined in the report include:

- ***Monitoring of radioactivity in streams*** at 69 locations by means of a network of check points operated by the Atomic Energy Commission and the states of Illinois, Kentucky and Ohio.
- ***Taste and odor identification investigations*** on Ohio River water directed toward more precise determination of the nature, characteristics and amount of substances that cause troubles.
- ***Development of recommended control measures*** for municipal and industrial wastes discharged into the Monongahela River.
- ***Assessment of operating procedures*** at coal mines that may have practical application in minimizing acid discharges.
- ***Conducting field tests on a membrane-filter laboratory technique*** to evaluate the adaptability of this method for bacteriological examination of water quality.

Copies of the report may be obtained from the Ohio River Valley Water Sanitation Commission, 414 Walnut Street, Cincinnati 2, Ohio.

Research Grants Awarded

DURING the fiscal year 1957, the federal Public Health Service awarded 144 research grants totaling $1,991,658. These were for the support of research studies in the field of sanitary engineering and occupational health.

An expenditure of $759,013 accounts for 82 grants toward water supply and water pollution control studies. Of these, 40 grants were for the support of new projects with the balance for continued support of projects already under way. Forty-six institutions in 27 states and the District of Columbia participated in this work.

In addition, the Public Health Service inaugurated a research fellowship program for advanced study in the broad field of sanitary engineering. Five predoctrinal research fellowships were awarded by the federal agency last year, supporting students in three institutions.

50c Lower

THE Joint Meeting Sewerage Commission, Newark, N. J. totaled its operating costs for 1957 recently and discovered that it collected sewage for a little less than 7c per million gallons less than the 1956 costs, and that it treated the sewage for 50c less per million gallons.

The Joint Meeting system collects sewage from 12 northern New Jersey municipalities. The total volume contributed averages between 16,500 million gallons and 17,000 million gallons. The operating and maintenance cost of the sewer system and treatment plant for the two years ran as follows:

	1956	1957
	per million gallons	
Sewer system	$2.425	$2.357
Treatment plant	12.925	12.491

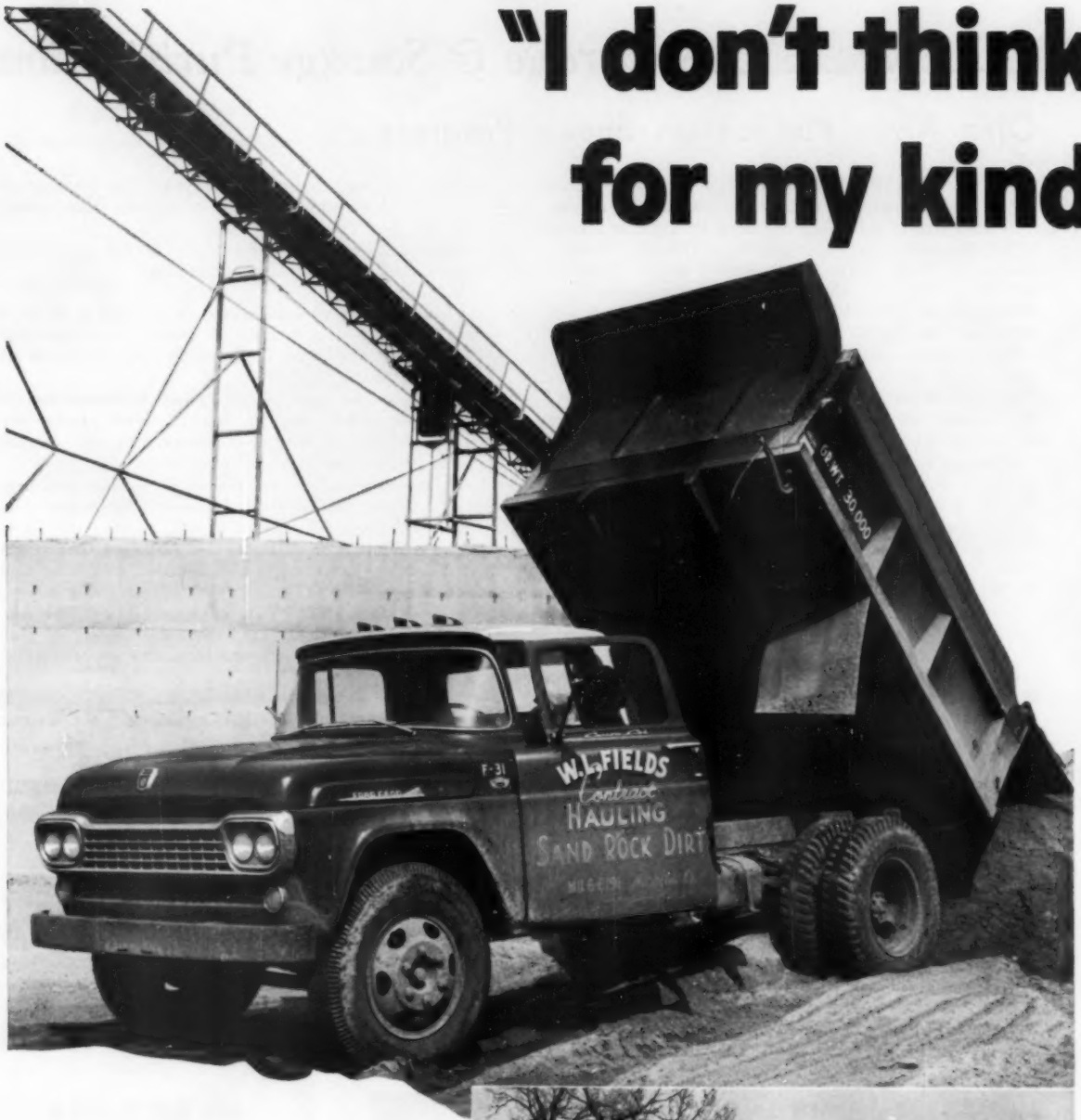
The plant provides primary treatment and barges the liquid sludge to sea. Leslie West is chief engineer. Edward P. Decher, secretary of the Commission, compiled the cost figures.

Reduces Sewer Charges

LAST year, the Greeley, Colo. City Council reduced the sewer service charge within the city from $1.20 per family unit to $1. City Manager B. H. Cruce anticipated that this would reduce the income approximately $15,000. However, due to an increase in the number of customers the decrease in income was less than $10,000.

Sewer service is furnished to most areas outside the city limits for $2.40 per living unit per month.

"I don't think for my kind



Official registrations show...

AMERICAN BUSINESS BUYS MORE FORD TRUCKS THAN ANY OTHER MAKE!

FORD TANDEM with 10-yard dump body and new F-600 with 5-yard dump . . . part of Mr. W. L. Fields's Ford Fleet.

there's a tougher truck of work"

says W. L. Fields
Contract Hauler, Wichita, Kansas

"And they cost less to operate than any trucks we've ever owned!

"Our 13 Fords are mostly two-ton dumps. They haul 6 yards of rock and sand, averaging about 7½ miles per gallon of gas. We get 6 mpg with Ford tandems carrying 14 tons. And they all really hold up. Ford's Heavy Duty V-8's are good for an average of 75,000 miles before an overhaul! We have a '55 Ford with over 150,000 miles on it, and I'll bet there's not another dump truck around here that's in such good shape."

FORD'S NEW 292 HD V-8
Brake Horsepower—187 @ 3800 rpm
Bore—3.75 in. Stroke—3.30 in.
Displacement—292 cu. in.

Whatever your business . . . there's a FORD truck for your special needs

Official registrations for 1957 show that *American business buys more Ford trucks than any other make.* There are many reasons for this popularity . . . many reasons for *you* to make your next truck a Ford!

Ford trucks are your best buy, too! Ford's initial costs are *low* and resale value is traditionally *high*. Modern Ford Styleside pickups, for instance, are the lowest priced with full cab-wide body . . . giving you 23% more loadspace than any traditional type pickup box.

Only Ford offers the economy of Short Stroke power in all engines, Six or V-8. And Ford's Heavy Duty V-8's offer new, advanced durability features. Ford's rugged cab and chassis construction means these new '58s are built to last. All this plus the proven fact that Ford trucks last longer adds up to America's No. 1 truck value.

See your local Ford Dealer for the latest in '58 trucks or the best in A-1 used trucks.

FORD TRUCKS COST LESS

LESS TO OWN . . . LESS TO RUN . . . LAST LONGER, TOO!

Our Municipal Notebook

Asks Help for 1960 Census

MUNICIPAL officials throughout the United States are being asked by the Bureau of the Census, U S. Department of Commerce, to supply up-to-date maps and boundary data of the nation's 18,000 municipalities as a guide to the planning of enumeration districts for the 1960 Censuses of Population and Housing.

Similarly, letters to each of the 3,000 counties in the United States will request maps and listings of all communities. These maps will be used by the Census Bureau in defining about 250,000 enumeration districts into which the country will be divided for the guidance of Census-enumerators.

In his letter to county officials, Census Director Robert W. Burgess requests them to provide the correct names of incorporated municipalities in the country; a large-scale up-to-date map; and notification of any changes which occur between now and April 1, 1960.

The cooperation of local officials is necessary in the preparatory work of the Census Bureau because it is only through their aid that the information and material essential to an accurate decennial census can be secured, Census officials state.

Each enumerator will be supplied with a map of the district he is to cover for the 1960 Census. These maps will have clearly defined boundaries so the enumerator will be able to determine that he has covered the area for which he is responsible and will not duplicate work of enumerators in adjoining districts.

The Censuses of Population and Housing will be taken in April 1960, but because of the size of the map-making job this work is being started two years in advance of the Census date.

Beverly Hills Honored

BEVERLY HILLS, Calif. has been named the 1958 recipient of an award for outstanding administrative performance from the Los Angeles Metropolitan Chapter of the American Society for Public Administration.

Beverly Hills was selected from among the cities of the metropolitan area on the basis of its performance in the areas of organization, finance administration, personnel administration and other achievements.

First News . . .

. . . on proposed municipal projects on which the municipality has not yet selected a consulting engineer:

Complete water system **at Placentia, Calif., reported April 11 by City Administrator Charles F. Warren.**

Sewage treatment plant and Pumping Station **at South San Francisco, Calif., reported April 14 by City Manager Eugene Aiello.**

Municipal services center and marina **at Vallejo, Calif., reported April 14 by City Manager L. R. Ficklin.**

Sewage treatment plant **at Farmington, Conn., reported April 18 by Town Manager Stephen A. Flis.**

Housing Stimulus For National Economy

CONGRESS apparently plans to move faster than the President in utilizing and expanding existing federal housing, urban renewal, and community facilities programs as major weapons in checking the current economic recession. The National Association of Housing and Redevelopment Officials reports the following:

- **Congress passed and sent to the President a modified version (S. 3418) of the Sparkman bill to stimulate residential construction.**
- **Senator Jacob K. Javits of New York, on behalf of himself and six other Republican senators, introduced a bill (S. 3548) to increase immediately urban renewal capital grant obligational authority by $500 million.**
- **The Senate Committee on Banking and Currency concluded hearings on a bill (S. 3497) introduced by its chairman, Senator I. William Fulbright of Arkansas, to expand the public facility loan program of the Community Facilities Administration. An identical bill (H.R. 11474) was introduced in the House by Representative Brent Spence of Kentucky, chairman, House Committee on Banking and Currency.**
- **The President instructed Housing and Home Finance Agency Administrator Albert M. Cole to accelerate the urban renewal, public housing, college housing, and public facility loan programs.**

Recreation Workers Needed

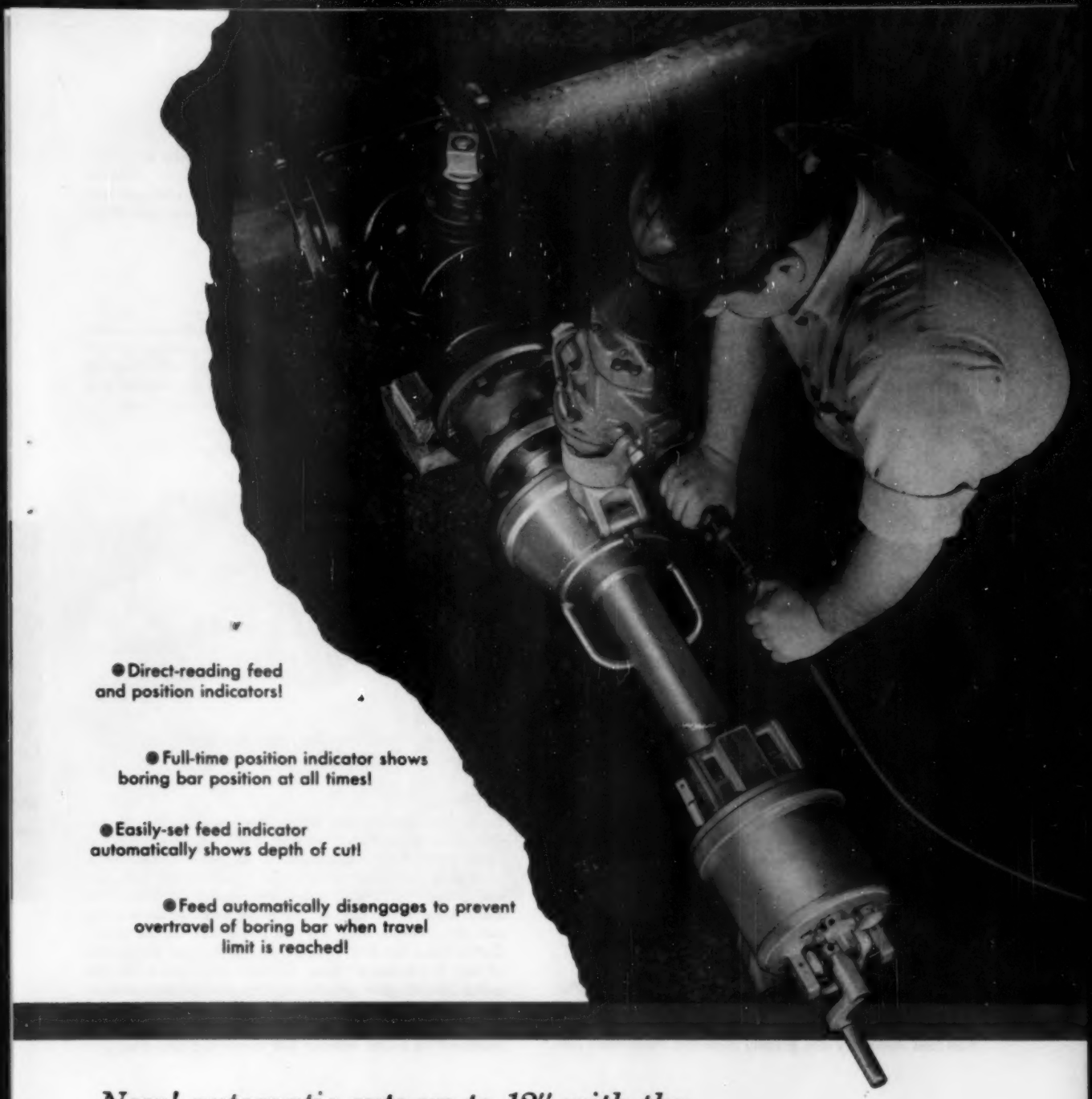
EMPLOYMENT may be slack in other fields—but not in recreation, according to Willard S. Sutherland, director, Recreational Personnel Service of the National Recreation Association. His estimates indicate that there will be at least 3,000 recreation vacancies in 1958—and only 200 to fill the jobs.

Salaries for jobs listed with the National Recreation Association at the end of 1957 ranged from $2,900 to $9,000. The largest number of jobs was in the district which includes New York, New Jersey, Pennsylvania, Delaware, Maryland, and Washington, D. C., but vacancies existed throughout the United States.

REPRESENTATIVE MUNICIPAL BOND ISSUES
February 27, 1958 to March 26, 1958

Date of Issue			*Purpose*	*Average Maturity (Years)*	*Net Interest Cost or Basis (Per Cent)*
2/27/58	Bloomfield, Ind. School Town	$ 12,000	School Building, 1958	12	3.22
2/27/58	Lakewood, Ohio	1,750,000	City Hall	13½	2.95 net
2/27/58	Mills County, Iowa	285,000	County Court House	9½	2.81104 net
2/27/58	Springville, N. Y.	57,000	Sewer—1958.	7½	3.37
3/ 4/58	Fort Dodge, Iowa	14,500	Street Improvement Special Assessment	5½	4.47
3/ 4/58	Los Angeles Co., Calif.	2,638,000	Juvenile Detention	6¼	2.275
3/ 7/58	Genoa, Ohio	35,000	Bridge	9¾	3.38
3/10/58	River Edge, N. J.	40,000	Fire Engine	5½	2.92
3/10/58	Waukesha, Wis., School District No. 2	35,000	School Building	11¾	3.189
3/13/58	Duke Co., Mass.	40,000	Airport	2½	2.19
3/17/58	Delta, Ohio	75,000	Swimming Pool	12¾	3.41
3/20/58	Madeira Beach, Fla.	36,000	Erosion Control	7	3.15
3/20/58	St. Petersburg, Fla.	3,000,000	Utility Tax Certificates	13¾	4.0983 net
3/25/58	Smithfield, R. I.	40,000	Water—Act of 1957	4½	3.178
3/26/58	Hoboken, N. J.	7,213,000	Sewage Disposal, Series D	22	4.34

Compiled from THE BOND BUYER


● Direct-reading feed and position indicators!
● Full-time position indicator shows boring bar position at all times!
● Easily-set feed indicator automatically shows depth of cut!
● Feed automatically disengages to prevent overtravel of boring bar when travel limit is reached!

Now! automatic cuts up to 12" with the

NEW MUELLER® CL-12

Machine!

New design and new features give automatic operation for faster, safer cuts; more strength for reduced maintenance; simplified operation for use by inexperienced personnel; more compact for easier handling; and standardized tools for simpler tool selection.

MUELLER CO.

DECATUR, ILL.

Factories at: Decatur, Chattanooga, Los Angeles; In Canada: Mueller, Limited, Sarnia, Ontario

FORM NO. W-8881

NEW *self-adjusting boring bar packing*

High temperature chevron packing is spring-loaded to insure positive, leakproof sealing without packing adjustments. Line pressure does not enter case.

NEW *rugged all-steel construction*

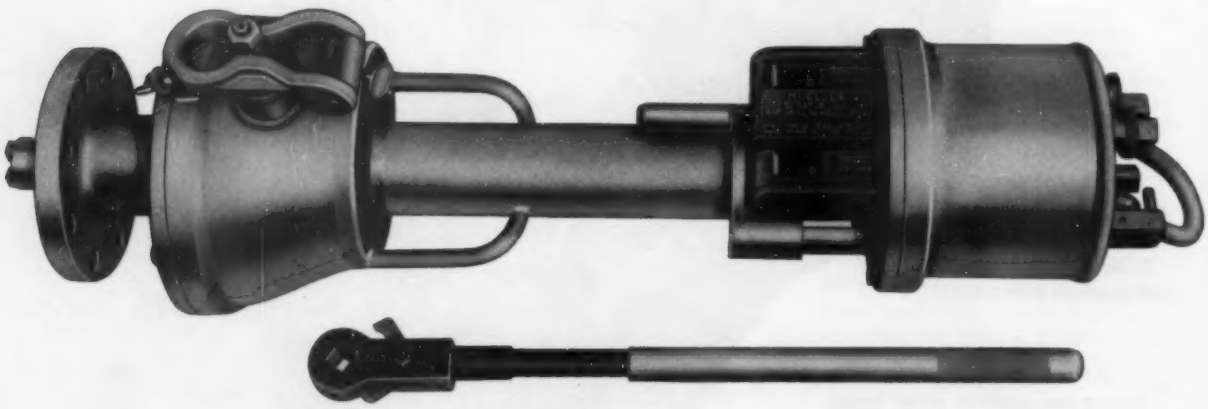
All working parts are totally enclosed in a galvanized steel case to permit complete lubrication and to prevent damage from dirt or other foreign matter and from rough handling. Lubricant is sealed in with "O" rings. Large bearing surfaces assure boring bar rigidity.

NEW *power or hand operation*

May be hand operated with ratchet handle or power operated with Mueller H-601 Air Motor or Mueller H-602 Gasoline Engine Drive Unit. No changes are required in the machine to use hand or power operation.

NEW *handling ease*

Telescopic design reduces over-all length and weight. Conveniently placed handles and lifting yokes permit easy handling of machine—manually or with hoisting equipment. Front lifting yoke may also be used to lock the boring bar while attaching or removing tools.



NEW *standardized tools*

Tungsten carbide tipped shell cutters are designed for cutting cast iron, cement-lined cast iron, asbestos-cement, reinforced concrete and steel pipe. Tool selection and inventory are greatly reduced. Each shell cutter is specifically designed ½" under the nominal size. This reduces drilling time and travel required and assures perfect cuts. The outside diameter of the cutter is slightly less than the inside diameter of the pipe being cut. Therefore, the cutter makes a complete, clean hole in the side of the main even when making cuts for laterals that are the same size as the main. Cutter hubs for 5½" size shell cutters and larger are of the "E-Z-Release" type. All pilot drills screw into the cutter hub to give greater rigidity and perfect centering. Pilot drill contains a mechanical coupon retaining device. The cutter, hub, pilot drill and coupon can be removed as a unit without first removing coupon.

NEW CL-12 FEATURES

. . . designed to reduce your cutting time!

Factories at: Decatur, Chattanooga, Los Angeles;
In Canada: Mueller, Limited, Sarnia, Ontario

FORM NO. W-8881

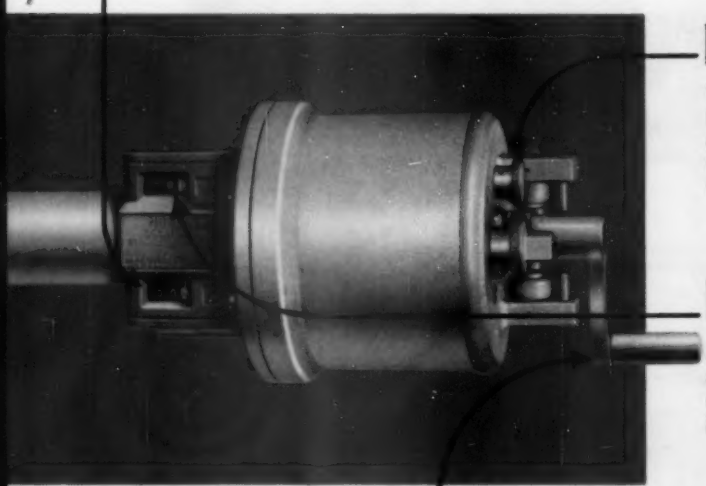
Now! a new, automatic drilling machine for 2" through 12" cuts in any type of pipe!

NEW *automatic tool position indicator*

Direct-reading indicator shows—at all times—the position of the pilot drill and shell cutter in relation to their fully-retracted or rearmost position. Large numerals read in inches and tenths of an inch and automatically add as the tool is advanced and subtract as the tool is retracted. Eliminates tool position guesswork.

NEW *automatic overtravel protection*

Tool feed is automatically disengaged when the maximum 25" travel of the machine is reached. Damage to the machine is prevented—even when the automatic feed has been set for travel beyond the maximum travel of the machine.



NEW *automatic feed-setting*

The amount of travel required in automatic feed can be quickly and accurately set in inches and tenths of an inch. This amount is clearly shown on the automatic feed travel indicator to insure accurate settings every time.

NEW *automatic feed travel indicator*

As the cut progresses, the direct reading indicator automatically subtracts—always showing the amount of travel remaining in automatic feed. You always know just how much of the cut remains to be made.

NEW *rapid hand travel*

When not cutting, the boring bar may be quickly and easily advanced or retracted by hand. Rapid advancement and retraction of the boring bar reduces time of operation.

NEW *automatic feed disengagement*

When the preset travel in automatic feed is completed and the indicator reads zero, the tool feed is automatically disengaged to prevent damage and loss of time.

Check with your Mueller Representative for complete details.

MUELLER CO. DECATUR, ILL.

specifications

MUELLER CL-12 *drilling machine*

Capacity and Use

The CL-12 Machine makes cuts from 2" through 12" inclusive in any type of pipe. It is used with tapping sleeves and valves to make lateral connections up to 12" under pressure and to install inserting valves up to 8" in size under pressure.

Working Pressure and Temperature

250 p.s.i. at 100° F.
500° F. at 150 p.s.i.

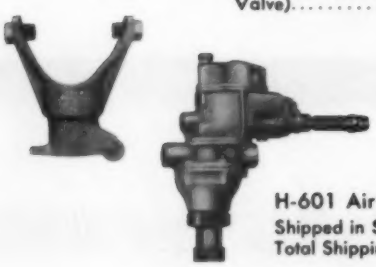
CL-12 Machine and Equipment Furnished

Shipped in Strong Wooden Chest
Total Shipping Weight: 400 Pounds
Approximate Weight of Machine: 260 Pounds

Equipment to be Selected

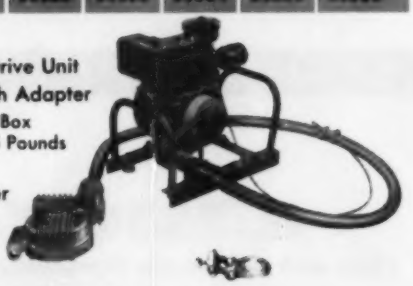
Power Operating Units, Cutting Equipment (cutter, pilot and hub) and Adapters.

	TAPPING VALVE							
Size of valve	2"	2-½"	3"	4"	6"	8"	10"	12"
Size of Drill or Shell Cutter	1"	2"	2-½"	3-½"	5-½"	7-½"	9-½"	11-½"
Drill	64567	64567	....	....	....	....	....	....
Boring Bar Adapter	83666	83666	....	....	....	....	....	....
Shell Cutter	....	....	83617	83203	83134	83135	83140	83141
Cutter Hub	....	....	83599	83671	83673	83676	83679	83682
Pilot Drill	....	....	83634	83634	83639	83675	83678	83681
Machine Adapter (For Mechanical Joint Tapping Valve)*	83668	83669	83367	83368	83369	83370	83371	83372
*Bolts, Nuts and Washers	2 ea. 36445	2 ea. 36445	Furnished with each Mechanical Joint Tapping Valve 3" size and larger.					
Machine Adapter (For Hub End Tapping Valve)	83772	....	83365	83362	83363	83364	83365	83366



H-602 Gasoline Engine Drive Unit with Adapter
Shipped in Strong Wooden Box
Total Shipping Weight: 265 Pounds

H-601 Air Motor Power Unit with Holder
Shipped in Strong Wooden Box
Total Shipping Weight: 95 Pounds



Order by Quantity and Catalog or Part Number

MUELLER CO.
DECATUR, ILL.

Factories at: Decatur, Chattanooga, Los Angeles;
In Canada: Mueller, Limited, Sarnia, Ontario

Printed in U.S.A.

POWER PACK
250 or 400 watts
IES Type II, III, or IV

...another FIRST from the Outdoor Lighting Center of the World

NEW POWER PACK

Now ... 400-watt mercury luminaire with built-in ballast!

See what the ...WER PACK offers you:

- **BIG DOLLAR SAVINGS** You no longer need a separate ballast. Or a transformer-base pole. Or a ballast adapter.
- **FASTER, SIMPLER INSTALLATION** Just make two terminal connections (instead of six or more). Fasten Power Pack to bracket. Move on to next pole.
- **EASIER MAINTENANCE** If there's an outage, you can check ballast and lamp from same ladder position. All ballast components are easy to get at, quick and simple to replace.
- **EASIER HANDLING, WAREHOUSING** Luminaire and ballast in one package, instead of separate and scattered about.
- **INTEGRATED, MODERN DESIGN** Power Pack is streamlined!
- **PREMIUM QUALITY** Same high lighting utilization you've experienced with the G-E Form 400—leader of the industry. In fact, Power Pack has 5% to 10% less power loss than conventional ballast circuit!

Get full details *now* from your G-E sales engineer or agent! General Electric Company, Schenectady, New York. 450-1

Progress Is Our Most Important Product

GENERAL ELECTRIC

The Smart Money Lines up with WALD

REFLECTO-LINER MODEL 12, the original Wald self-propelled, single line "powerhouse", a sure winner.

REFLECTO-LINER MODEL 16, highly maneuverable "Portable Double-Liner", sturdy, compact, economical and *fast!*

You can bet with confidence on these two rugged Wald entries to come in first on all outdoor painting jobs. Their clear-cut stripes, 2″ to 6″ wide, take the gamble out of safety markings. And you've got a sure thing in air supply reserves . . . over 100% for both the Model 12 and Model 16. Both feature foot-controlled braking pressure equalized on trailer wheels. And both have air-activated elbow traction, the latest in instant positive-drive mechanism. Winning 'form', in or out of heavy traffic, has made both models popular favorites . . . two more proven thoroughbreds out of Wald engineering!

Send for Reflecto-Liner Catalog #W58

WALD INDUSTRIES, INC.
HUNTINGDON, PENNSYLVANIA

1958 All-America Cities Competition

THE ANNUAL All-America Cities Awards competition already has several dozen cities indicating they would enter the 1958 lists. Entries this year are expected to exceed last year's total, when over 100 communities competed for the coveted title.

The All-America Cities Awards, jointly sponsored by the National Municipal League and *Look* Magazine, are bestowed each year on 11 cities for outstanding action taken by their citizens in solving major community problems. The contest is now in its tenth year.

George H. Gallup, director of the American Institute of Public Opinion and chairman of the council of the National Municipal League, will serve as foreman of the jury which will make the final selection of cities to receive 1958 awards.

Achievements that can help a city win, according to the sponsors, include such activities as citizen-led campaigns for better government or better schools; long-term planning to insure orderly growth, improve public facilities or check slum blight; or noteworthy citizen action in the face of some unusual challenge or emergency.

Any United States community, regardless of size, is eligible to compete, provided it has made outstanding progress as a result of citizen action.

Official entry forms are obtainable by addressing the All-America Cities Competition, National Municipal League, 47 East 68 St., New York 21, N. Y. The closing date for completed entries is July 21, 1958.

States Spend $146 Per Person

STATE GOVERNMENTS altogether spent $146 per capita in fiscal 1957, according to a report issued today by the Bureau of the Census, U. S. Department of Commerce.

Nearly all categories of state expenditure increased from 1956 to 1957, the Census report shows. Per capita amounts of state spending for major governmental functions were as follows:

Education	$ 39.37
Highways	35.79
Public Welfare	16.64
Health and hospitals	11.45
All other purposes	23.44
	$126.69

State payments to local governments amounted to $7,310,000,000, or three-tenths of total state expediture. State debt outstanding rose 6.6% during fiscal 1957 to a new high of $13,738,000,000 at the end of the fiscal year.

From 1956 to 1957 general revenue was up in 46 of the 48 states; general expenditure increased in 43 states; and the volume of debt outstanding was up in 35 states. Summary figures for each state appear in the census report, *Summary of State Government Finances in* 1957. This report is for sale by the Bureau of the Census, Washington 25, D. C., and all field offices of the Department of Commerce. Price 25 cents.

N. J. Planners Ask Registration

THE NEW JERSEY Planners Association has drafted legislation calling for state registration of professional planners. This bill if passed, will:

1. Provide a means of establishing basic standards of training and experience to permit someone to say he is a professional planner.
2. Establish a means of placing responsibility for poor practice.
3. Assist in encouraging careful and thorough performances of professional duties.
4. Provide officials and the public with the means of protecting themselves from poor practice, which protection they can now get no other way.

The bill, according to the New Jersey Planners, is aimed at giving municipal officials, planning boards and others the means of gauging the qualifications of the purported planner other than his own sales talk.

Tax Differences Decrease for City, Suburbs, and "Exurbs"

THE MILWAUKEE Metropolitan Area is finding that property tax rates are becoming increasingly similar between 1) the city and its suburbs; 2) the suburbs and the bordering communities; and 3) Milwaukee County and the other 70 Wisconsin counties.

A report by the Citizens' Governmental Research Bureau for Metropolitan Milwaukee discloses that each year sees a narrowing of the variations in the property tax rates per $1,000 of the equalized valuation throughout Wisconsin. Ten years ago Milwaukee County's tax rate averaged 32% more than the other 70 counties. Today, the variation is only 12%.

Similarly, ten years ago, the City of Milwaukee had a tax rate 35% higher than the average of its suburbs. Today's comparison shows the city's tax rate as 23% more.

Four years ago, the suburban communities in Milwaukee County averaged an equalized tax rate that was 27% higher than the 10 bordering communities in Ozaukee and Waukesha counties. Today the tax rate difference is only 10% more.

The difference reflects the need of the suburban areas to build facilities for its growing population. The county communities are increasing their property taxes by 11% this year to finance the 1958 budgets. This is the largest year-to-year percentage gain since 1949.

A complete copy of the study can be obtained from the Citizens' Governmental Research Bureau, Inc., with offices at 125 E. Wells St., Milwaukee 2, Wis.

Water, Sewage Problems Ease in Nebraska

WATER supply and water pollution abatement problems in Nebraska are easing, according to T. A. Filipi, director of sanitation, State Department of Health. There is the greater interest in the subject being shown by not only municipal officials, but also the citizens depending upon these utilities. Municipal officials are finding it much easier to propose and follow out projects than they did in the past. In all but one instance the citizens voted sufficient bonds to carry out the work. The supplying of clear factual information through magazines such as THE AMERICAN CITY has educated many persons in

CUSTOMER

It fits in our budget with greatest of ease,
With savings at which no smart buyer can sneeze,
Low cost plus long life and best service he sees
Mean premium pipe at low pay.

CONSULTANT

It matches our plans with the greatest of ease,
Complete with bends, shorts, Y's, adapters and T's,
Designed for what pressure or backload we please,
The pipe we are proud to OK.

CONTRACTOR

It goes in the ground with the greatest of ease,
Is rapidly jointed come storm, heat or freeze,
No caulk, bolt or weld—installation's a breeze,
And backfilled the very same day.

OPERATOR

It carries full pressure with greatest of ease,
Corrosion and tubercles never displease,
High maintenance costs never put on the squeeze
With uncalled for bills to defray.

LOCK JOINT CONCRETE PRESSURE PIPE for this QUARTET!

CHORUS

It fills all our needs with the greatest of ease,
It's thrifty yet safe everybody agrees,
No wonder we all say, "No substitutes, please!"
When Lock Joint's the best pipe to lay.

LOCK JOINT PIPE CO.

East Orange, New Jersey

Sales Offices: Chicago, Ill. • Columbia, S. C. • Denver, Col. • Detroit, Mich.
Hartford, Conn. • Kansas City, Mo. • Perryman, Md.

Pressure • Water • Sewer • REINFORCED CONCRETE PIPE • Culvert • Subaqueous

the true picture and the needs, Mr. Filipi feels.

The federal program of grants-in-aid has been a definite help to Nebraska communities in Mr. Filipi's opinion. The fact that they received a 30% grant was an inducement to immediate construction. The municipal officials took advantage of a 30% discount just like anyone else. Under the grants-in-aid program 23 projects are now being processed. This is for a two-year period. Prior to this, three or four projects per year were assumed to be good progress.

The fact that Public Law 660 is operating on a national level has likewise been a help. The excuse of not providing treatment until a neighboring state would initiate the work can no longer be given. The overall federal attitude toward state relationship is likewise helpful. The entire program in Mr. Filipi's opinion should continue until "we have the entire country cleaned up."

Chicago's Proposal: Tax Cars on Length and Width

IN A recent study, Chicago, Ill., officials proposed taxing the automobile on length and width rather than on age, weight, cost or horsepower. These officials, said the American Municipal Association, feel that long, wide cars use up too much space on city streets, both in driving and in parking. The present bases of automobile taxation, they feel, bear no relationship to the cost to the city in street construction and maintenance.

Chicago's protest against long, wide cars has also been voiced by Mayor Robert F. Wagner of New York City and other officials in the New York metropolitan area. Recently, they protested to automobile manufacturers and urged them to give more consideration to urban traffic and parking problems when designing new cars.

Soil Bank Program Brings Municipal Forest

MOORESVILLE, N. C. has been able to use the federal soil bank program to develop a community forest, according to R. T. Nichol, town manager.

The town has planted 15,000 loblolly pine seedlings on 15 acres of municipal cemetery reserve. In previous years, this has been rented to a local farmer who used it to grow cotton, oats, corn, and lespidiza.

Under the soil bank program, Moorseville will be reimbursed for this planting at the rate of $12 per acre, and will receive annual payments amounting to approximately $135. Previously, the town received $100 annual rental from the farmer.

The pines have been spaced every 8 feet in 8-foot rows. As the pines mature, Mr. Nichol expects to see growing interest among the citizens for their community forest.

National Recreation Month

June is National Recreation Month. By helping celebrate it, you can make your citizens more aware of the excellent recreation facilities and services your city has to offer. To assist you with your celebration, the National Recreation Association has prepared a kit for your use. It includes a planning schedule, a suggested calendar of events, newspaper, radio and television publicity, a suggested proclamation on behalf of the mayor, a suggested letter for the clergy and other similar material.

The National Recreation Association, 8 West 8th Street, New York 11, New York, will be glad to supply you with a kit without charge.

Nine Cities Honored for Home and Neighborhood Improvement

NINE CITIES recently won Community Home Achievement Awards for outstanding progress in the improvement of homes and residential areas. Eight of the honored cities are in continental United States, the ninth in Puerto Rico. The awards, given for progress largely culminating in 1957, are sponsored by *Look* Magazine.

The winners are Anniston, Ala.; Atlanta, Ga.; Columbia, S. C.; Detroit, Mich.; Kansas City, Mo.; Providence, R. I.; Richmond, Calif.; San Juan, Puerto Rico and Syracuse, N. Y. In addition, Palmer, Alaska, was given honorable mention for its efforts.

What the Home Towners Call Themselves

YOU'D probably never know it unless you lived there, but people in the following cities call themselves by the following names:

Birmingham, Ala.	Bimian
Little Rock, Ark.	Little Rockian
National City, Calif.	National Citizen
Jacksonville, Fla.	Jaxon
Moscow, Ind.	Moscowhonian
Des Moines, Iowa	Des Moiner
Monroe, La.	Monroyan
Havre de Grace, Md.	Havre de Gracian
Lynn, Mass.	Lynner
Cadillac, Mich.	Cadollacian
Grand Rapids, Mich.	Grand Rapidian
Faribault, Minn.	Fariboite
Omaha, Nebr.	Omahan
Cohoes, N. Y.	Cohosien
Penn Yan, N. Y.	Penn Yanner
Greensboro, N. C.	Grennsburgher
Alliance, Ohio	Alliancenian
Bend, Ore.	Bendonian
The Dalles, Ore.	Dallesite

Flood-Damaged Area Up for Renewal

TORRINGTON, CONN. has received final approval of a $1,767,731 federal loan and $1,558,555 capital grant to carry out its "South Central" urban renewal project, according to Commissioner Richard L. Steiner. The Urban Renewal Administration funds will enable the city to eliminate a blighted area directly south of the central business district.

The predominantly residential area, severely damaged by the flood of 1955, is now characterized by mixed land uses and congested and dead-end streets. Containing 78 structures, most of which are substandard, the area will be redeveloped for commercial and public parking uses. The 93 families presently living within the area will be offered relocation in decent, safe, and sanitary dwellings within their means.

Victor Gruen Honored

THE AMERICAN INSTITUTE of Architects, Memphis Chapter, has awarded a gold medal to Victor Gruen, architect, of nationwide architectural firm with offices in New York, Detroit and Los Angeles, for "Outstanding Achievement in Architecture and City Planning."

STRATEGICALLY LOCATED AMERICAN-CONCRETE PRODUCTS FOR MULTI-

ROUND PIPE

As the nation's largest maker of concrete culvert and drainage pipe, American-Marietta offers contractors round pipe of known permanence and performance. A full range of sizes is available, with pre-tested strengths to meet various specifications. For extreme loads see Hi-Hed Pipe, below.

HI-HED PIPE

Elliptical Hi-Hed Reinforced Concrete Pipe permits greater self-cleansing velocities in dry weather periods. Also perfect for drainage structures under unlimited fills because Hi-Hed has 50% greater strength than its round pipe equivalent.

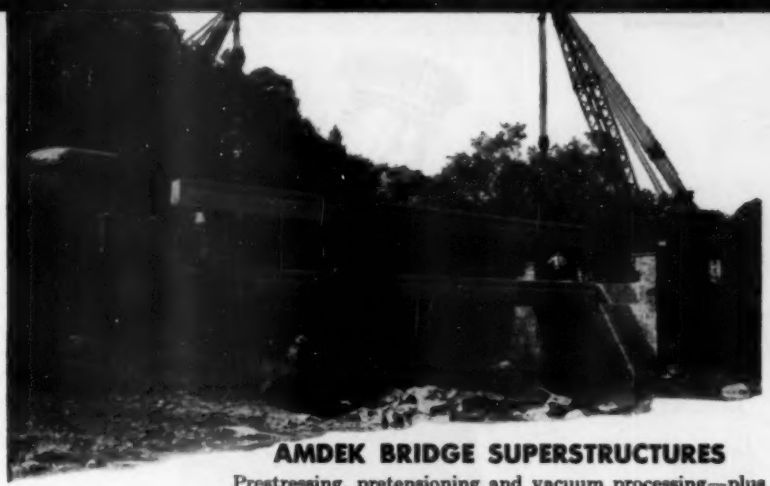
FLAT BASE PIPE

Save as much as 30% in the construction of pedestrian underpasses, culverts and cattle passes with pre-cast Flat-Base Pipe. Can be jacked under highways without disturbing traffic.

CONCRETE CRIBBING

Used as a retaining wall, both open-faced and closed-face "King-Size" Cribbing offer flexible construction unaffected by movements that crack monolithic walls.

MARIETTA PLANTS READY TO SUPPLY BILLION DOLLAR HIGHWAY PROGRAM



AMDEK BRIDGE SUPERSTRUCTURES

Prestressing, pretensioning and vacuum processing—plus the use of special voids—results in a stronger, lighter bridge member that can be handled like steel beams in any weather. Pre-cast Amdek sections, above, were positioned in just six hours. Amdek eliminates painting and maintenance.

A giant in the construction materials industry, American-Marietta offers a related group of essential concrete products for use in building and rebuilding the nation's highways. American-Marietta has expanded its plants to supply the increased demand and to prepare for still more volume. Manufacturing facilities are strategically located throughout the United States to assure distribution near points of use. Send for complete information about any of the products illustrated on these pages.

LO-HED PIPE®

Elliptical Lo-Hed Pipe carries a greater flow than its round equivalent—in a minimum depth of cut with increased depth of cover. Easier to lay, to grade and line. Pre-tested strengths to answer any low headroom problem.

INNER CIRCLES®

Tunneliner Process allows passing of pipe through pipe underground without requiring excavations or disruption of surface traffic. Work progresses regardless of weather conditions.

Our technical staff will be pleased to assist you with your problems.

PROGRESS IN CONCRETE

TRADE-MARK REG. U. S. PAT. OFF.

AMERICAN-MARIETTA COMPANY
CONCRETE PRODUCTS DIVISION

GENERAL OFFICES: AMERICAN-MARIETTA BUILDING, 101 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS • PHONE WHITEHALL 4-5600

NEW SQUAD CAR
but not a new radio

"Our Motorola 2-way radio has outlasted several squad fleet changes"

The rugged construction and dependable long life of Motorola 2-way radio is a fact. Police officials know from experience that Motorola 2-way radio with its many exclusive patented features is built to keep on working for years . . . long after other types of equipment give way to the need for replacement. No wonder Motorola 2-way radio is specified by more police departments than all other types combined.

Here's Why Motorola is Better

OBSOLESCENCE-FREE DESIGN—Years-ahead design protects you from costly conversion changes. For example, with today's Motorola radio you have no 6 to 12 volt changeover problems, regardless of the cars you have now or will have in the future.

RELIABILITY—Top quality parts and workmanship give you communications you can depend on . . . always. Facts prove that Motorola delivers top performance at lowest maintenance costs year after year. It's your best long-range investment.

LONG SERVICE—While ordinary systems using fewer tubes are being overworked, Motorola provides reserve gain to take the toughest jobs in stride . . . even years from now.

Here's 2-way radio you know you can depend on. Specify Motorola.

MOTOROLA 2-WAY POLICE RADIO

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC • A Subsidiary of Motorola, Inc. • 4501 Augusta Blvd. • Chicago 51, Illinois

Fire Activities in Cedar Rapids

CEDAR RAPIDS, Iowa has 7 fire stations serving an area of 30 square miles with a population of 85,000. We have five 750-gpm and two 1,000-gpm pumping engines, one 85-foot aerial ladder truck and one 65-foot aerial truck-and-pumper combined in first line service. A rescue truck and an auxiliary truck carry portable generator and lights, portable pump, salvage covers and other equipment.

We have a maintenance garage with a master mechanic in charge of all repair work.

Inspections

Our director of fire prevention has four building inspectors who inspect all buildings except single- and two-family dwellings. The number of inspections made during the year depends on the hazard involved. The greater the hazard the more frequent the inspections.

All fire apparatus is equipped with radio. This factor has made it possible for us to engage in a company inspection program where each company inspects the buildings in its district and becomes familiar with building and contents. For the last three years we have conducted home inspections, with the help and support of newspaper, radio and television publicity.

Cedar Rapids' fire-fighting apparatus includes a new 1,000-gpm Mack pumping engine (left) and a Pirsch pumper.

We have a full-time training instructor to add experience to the basic ability, skill and courage with which firemen must start.

JESSE G. HUNTER, *Chief*
Fire Department
Cedar Rapids, Iowa

New Fire Alarm in Syracuse

THE new fire alarm call system in Syracuse, N. Y. consists of: a box painted red and black; a red light atop the box, always on; and an individual phone.

The telephone is connected to a 24-hour switchboard at the downtown City Hall. When an individual picks up the receiver, the switchboard at City Hall automatically lights and sets off a recording unit which takes down the conversation between the citizen turning in the alarm and the switchboard operator. The record then becomes a permanent part of the municipal files.

One problem was supplying 110 volts to the light above the fire alarm box, while providing a shield for the wiring which would not interfere with the low-voltage telephone cable. Another problem was providing conduit for this light supply line from the top of the 40-foot power pole down to a point 8 feet above the ground. Kralastic Pipe, ¾-inch, supplied by the Plastic Pipe Division of Republic Steel to serve as conduit on both these phases of the installation, solved both problems.

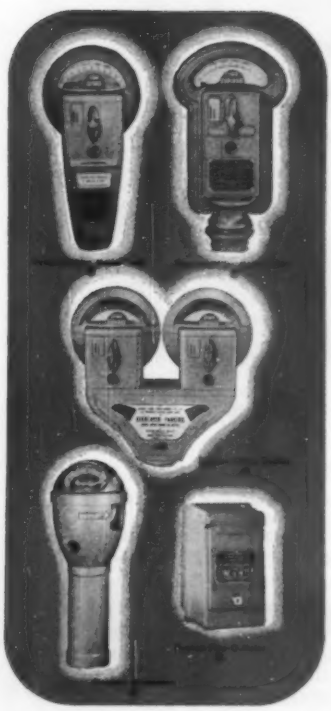
A citizen of Syracuse is sending a fire alarm through one of the city's new "person-to-person" phone call stands.

No Time for Burglars

AN eight-page illustrated booklet, describing the best ways to thwart burglars attempting to enter an empty building, has been distributed by the Philadelphia Police Department. In addition to leaving lights burning and using sturdy locks, says Police Commissioner Thomas J. Gibbons, recommendations include making sure that windows and skylights are well barred, and placing safes where they may be seen from the street outside with a light burning over them.

The foreword to the pamphlet states that the Philadelphia Police Department is "trying to put burglars out of business." It adds that reducing the time available in which a burglar can work is the function of the police, while it is the function of citizens to make certain that illegal access to their properties will be either impossible or extremely difficult.

CAPITAL PRESS SERVICE



CANADA'S CAPITAL installs DUNCANs!

As part of a well planned traffic control program, Ottawa has chosen DUNCAN-BUILT equipment to regulate parking.

More municipalities everywhere are daily being included among the many satisfied users of DUNCAN-MILLER meters.

DUNCAN-MILLER . . . the world's leading manufacturer of parking control units is predominantly preferred in cities throughout Canada, Australia, New Zealand and the United States as well as in most foreign countries.

Write today for a demonstration and free trial installation.

DUNCAN PARKING METER CORP.

835 NORTH WOOD STREET, CHICAGO 22, ILLINOIS • FACTORIES: HARRISON, ARKANSAS AND MONTREAL, P.Q., CANADA

Manufacturers of fully automatic and manual parking meters.

Protect Play Equipment and Save Money!

CAREFUL maintenance and care of your playground equipment can save a great deal of money.

At the start of each season, check your equipment for its state of repair. Also check the need for repainting and/or refinishing. If part of the equipment must be replaced, try and standardize it as much as possible with the rest of your equipment. Also, determine whether or not it is possible to replace part of a piece of equipment or apparatus, for example, the chute of a slide, rather than the whole piece.

During the season maintain frequent inspections. This will help you to spot and check immediately any equipment beginning to show signs of deterioration. Checking and inspecting your equipment and apparatus regularly can add years to its life.

In inspecting and checking the equipment, careful attention should be paid to the wood parts. These should be refinished and repainted regularly. Badly worn, splintered or cracked slide siderails, swing seats or see-saw boards are dangerous for the children. Before refinishing, make sure these parts are well sanded.

If chutes to your slides are badly worn, it is a good idea to replace them with new ones of all-steel construction. Ship the chutes off to the factory for rebuilding, together with the chute fittings. By having the chute fittings, the factory can see that they are properly placed on the new chutes, thus simplifying the installation of the chutes and saving money.

To ensure longer life for the metal parts of your playground equipment—particularly the swing chains, hooks, hangars and frame fittings—check to see that they have been galvanized by the hot-dip process. If properly galvanized, these parts should last you a minimum of eight years. If rust begins to appear, you will be able to be rid of it quickly by simply applying steel wool. After using the steel wool, just apply two coats of any good grade of outdoor enamel or of any standard asphalt-base bridge paint.

PHOTOS COURTESY OF AMERICAN PLAYGROUND DEVICE COMPANY

Whe-e-e! Safe play equipment means safe fun for children. Shown here are an all steel slide and a castle tower.

When storing your equipment away until the next season, make sure that you put it away in an orderly, organized way. This will save you time and labor costs next season, when it comes time to get the equipment out and ready for re-installation.

NORMAN R. MILLER, *Vice President*
American Playground Device Company
Anderson, Ind.

World's First Artificial Competitive Ice Rink

FARWELL Field in Detroit, Mich. is the home of the first artificial ice rink in the world specifically designed for amateur competitive skating. Opened at the end of January, the rink incorporates a general skating area, a hockey rink, and an oval racing track. Rink design also incorporates a loudspeaker system, night lights and an artificial lake with fountain sprays, all within an overall area of 400 feet long by 100 feet wide.

The Farwell Field rink puts Detroit in the running to become one of the leading skating centers in the United States. At the opening dedication ceremony, John J. Considine, general superintendent of the Department of Parks and Recreation started off the City of Detroit's first championship speed skating meet. The track for championship speed skating is one-eighth of a mile in length, which by removing the gates of the hockey pen, may be enlarged to a 1/6-mile track.

Laid out on one uniform surface, the frozen area combines the 190-foot x 85-foot hockey pen and the competitive track. When these areas are not in use for either hockey games or meets, they will be used for general skating. Other features of this rink include a 200-foot x 95-foot lake with three fountains and two spray bars, which, by means of underwater floodlights, can be illuminated in different colors. There will be portable bleachers for spectators. The rink area is designed to seat 3,400 persons.

Some of the technical features of the rink are five 100-hp compressors using 15,000 gallons of salt brine to create ice; 35 miles of plastic pipe underwater lights; dispersal of heat in the ice by the artificial lake; illumination of ice track and hockey pen by mercury vapor lights and floodlights.

The refrigeration equipment to maintain the ice consists of five Frick Freon 22 Compressors, five Acme Brine Chillers and five condensers, driven by five 100-hp electric motors. The refrigeration plant is rated 340 tons at 0° F. suction temperature.

The pipe is stored in a storage trench adjacent to the rink, laid in straight lengths with the brine left in the pipes.

The underwater water lights are totally enclosed submersible floods of 250 watts each: 10 clear, 8 red, 8 amber and 16 blue.

Four mornings a week are reserved exclusively for speed skating and hockey. The service charge is 10c for children and 25c for adults.

In the summer, the race track and hockey pen area will be utilized for roller skating. After the plastic pipe is removed, a 1½-inch green asphalt base laid on a reinforced-concrete structural slab is visible.

Informative Catalogs — Yours For The Asking!

These catalogs contain information of great value to public officials and engineers. Write directly to the manufacturers, or use the Post Card on the insert following Page 54.

Stops Corrosion

640 If it needs protection against weather and corrosion, Parlon-based paint will preserve it at lower long-term cost. To learn how the unusual properties of these protective coatings can help you solve your municipal maintenance problems, write HERCULES POWDER CO., 900 MARKET ST., WILMINGTON 99, DEL.

Trouble-Free Excavators

641 BADGER DIVISION, THE WARNER & SWASEY CO., WINONA, MINN., has just issued a catalog that will be of particular interest to all municipal officials concerned with excavating problems. Working ranges and specifications of the full line of Hopto hydraulic excavators, from ⅛- to ½-yard capacity, are presented.

HOLMES-OWEN LOADER

SAVES up to 50% ON MANY Jobs!

ONLY LOADER with "Elbow-Action"

Here's a multi-purpose unit that can substantially *lower* the cost of such jobs as: Maintenance of streets, parks, etc.; Collection of trash, leaves and dumping of street sweepers; Handling of sand, crushed rock and numerous other loose materials. Use of a self-loader saves time, labor and equipment by permitting the truck driver to do light digging, grading, loading and hauling . . . without additional manpower or equipment. The LOADER is hydraulically operated, lifts ¾ yard of material per bucket, loads the average dump truck in about 4 minutes and can be used very profitably on most any 2, 2½ or 3 ton truck.

New Claw-Type Bucket

The Loader can be equipped with a hydraulically operated claw which allows the operator to pick up about 25% more material per bucket. Through rugged strength and flexibility of "Elbow Action", loading can be easily accomplished from a standstill—with complete inversion and emptying of bucket, *without* spillage or cab protector.

Write Factory Today for Details.

ERNEST HOLMES COMPANY

Chattanooga 7, Tennessee

Increased Water Revenue

642 Water revenues low? Water department profits on the downgrade? Then it's time to *Take Five* and learn about Badger's planned rehabilitation program to help municipal water departments increase profits and get better, accurate metering. For details, write BADGER METER MFG. CO., DEPT. C-1, 4545 W. BROWN DEER RD., MILWAUKEE 18, WIS.

Effective Insect Control

643 Thanacide doesn't plague insects, it kills them. Even to those insects immune to chlorinated insecticides it brings death—unsparingly, quickly. It is recommended for all municipal spraying and fogging operations, and when used in a Dyna-Fog generator is most effective. For details, write NATIONAL DISINFECTANT CO., 2417 COMMERCE, DALLAS, TEXAS.

Resurfaces Ice at Municipal Rinks

644 Increase skating time at your municipal ice rinks with a Zamboni Ice Re-Surfacer. This ice maintainer shaves the ice, picks up snow, squeegies, and lays water on the ice to provide a fresh, new surface. Economical, and fast operating. For details, write FRANK J. ZAMBONI & CO., 8041 E. JACKSON, PARAMOUNT, CALIF.

Rugged, Performance-Proved Tractors

645 The J. I. CASE CO., DEPT. D-1568, RACINE, WIS., offers a complete line of heavy-duty prime movers to meet the needs and budget of every municipality. Wheel-type and crawler tractors plus a full complement of matching loaders, bulldozers, backhoes, fork lifts and trailers are all sturdily-built and power-packed. For details, write the company.

Rent-A-Street Sweeper

646 WAYNE MFG. CO. has devised a plan whereby small as well as large municipalities can have a modern, efficient street sweeping program without making a capital investment. Full facts on this rental system are contained in a "Question and Answer" folder, available from the company at 1432 E. LEXINGTON AVE., POMONA, CALIF.

Protect Against Industrial Radiation

647 Radioactivity, whether one likes it or not, is a day-to-day part of our present nuclear age. Consequently, detection of radiation, whether from fall-out, from nuclear power or process plants, from hospital or industrial wastes, or enemy action, is a continuing responsibility. Today, municipal fire, police, water, sewer, air pollution control departments need accurate, sturdy monitoring equipment to provide this protection. Write for free illustrated technical literature on portable Gamma-Beta meters from RIGGS NUCLEONICS CO., 717 N. VICTORY BLVD., BURBANK, CALIF.

(See page 37 for more Bulletins)

ROCKWELL SEALED REGISTER WATER METERS

Less to wear—Less to repair!

only two moving parts in water

The Rockwell Sealed Register Meter has only two moving parts in the flowing stream—the piston and the piston roller. All other moving parts operate—clean, dry and lubricated for life—within a hermetically sealed register casing protected against corrosion and erosion.

This sealed register forever ends condensation troubles. There can be no fogging or clouding to obscure readings. A powerful magnetic drive eliminates the need for a stuffing box, an exposed intermediate gear train and driving dog.

Simple isn't it? . . . and more accurate, too, for fewer parts mean less friction and wear, a smoother running meter and one more sensitive to low flows. Get full facts now—write for bulletin to Rockwell Manufacturing Company, Pittsburgh 8, Pa.

SEALED REGISTER WATER METER

another fine product by

ROCKWELL

Top View

Side View

End View

40% 40% 40%

MORE WATER

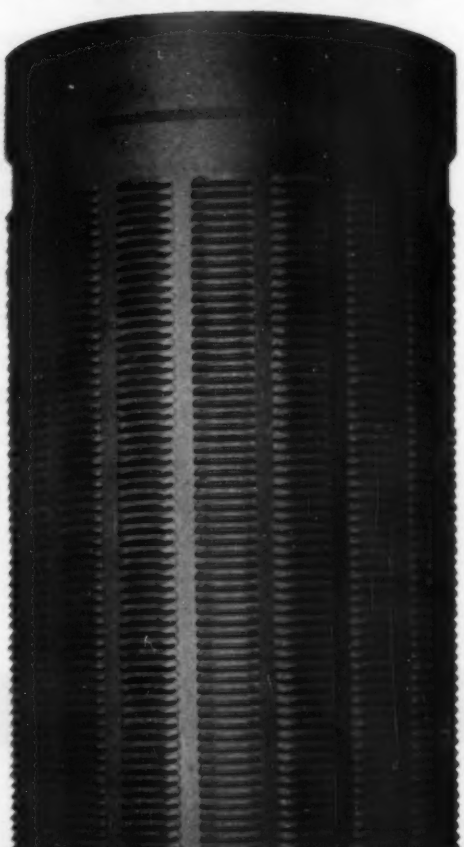
can flow through the NEW Layne 134 shutter screen

WHY? *Increased inlet area!*

Here's a screen that is even more efficient . . . has *greater strength* than the long-lasting Layne 96 shutter screen that made Layne water wells famous.

This new development of Layne creative research is used only in Layne water well installations, and available exclusively through Layne Associate Companies.

Contact your nearest Layne Associate Company for complete details.



LAYNE & BOWLER, INC. MEMPHIS
General Offices and Factory
Memphis 8, Tenn.

Layne Associate Companies throughout the world.

WATER WELLS
VERTICAL TURBINE PUMPS • WATER TREATMENT

Layne

ASSOCIATE COMPANIES

LAYNE ARKANSAS COMPANY
Stuttgart, Arkansas

LAYNE-ATLANTIC COMPANY
Norfolk, Virginia
Glen Burnie, Maryland
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Orlando, Florida
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LAYNE-CENTRAL COMPANY
Memphis, Tennessee
Jackson, Mississippi
Cleveland, Mississippi
Pensacola, Florida

INTERNATIONAL WATER CORPORATION
Pittsburgh, Pennsylvania

LAYNE-LOUISIANA COMPANY
Lake Charles, Louisiana

LOUISIANA WELL COMPANY
Monroe, Louisiana

LAYNE-MINNESOTA COMPANY
Minneapolis, Minnesota

LAYNE-NEW YORK COMPANY
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CANADA

INTERNATIONAL WATER SUPPLY, LTD.
London, Ontario, Canada
Oakville, Ontario, Canada
Montreal, Quebec, Canada
Quebec, Quebec, Canada
Saskatoon, Saskatchewan, Canada
Vancouver, B.C., Canada

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

Speeds Sewer, Water Line Construction

648 Take the lag out of sewer and water main construction jobs; put a Bantam to work. It will trench, backfill, unload pipe, handle heavy valves and complete other chores with speed and at low cost. For details on Bantam truck cranes and excavators, write SCHIELD BANTAM CO., 234 PARK ST., WAVERLY, IA.

Better Streets Through Salt Stabilization

649 Stabilizing gravel streets with salt makes a big difference—ask your municipal engineer. With it you get smooth, durable, water-repellent surfaces that require minimum maintenance and give more service per dollar expended. For a free booklet on salt-stabilized streets, write MORTON SALT CO., INDUSTRIAL DIV., DEPT. AC-558, 120 S. LA SALLE ST., CHICAGO 3, ILL.

Digester Supernatant Corrector

650 Preliminary engineering data on a new method and apparatus for aero-oxidation of digester supernatant in sewage treatment plants is announced by YEOMANS BROTHERS CO., DEPT. P, 1999 N. RUBY ST., MELROSE PARK, ILL. Called Presaire, it prepares supernatant for return to primary and secondary treatment units by satisfying a good portion of the immediate oxygen demand. For complete details, request *Leaflet* 400.

It's Anti-Mosquito

651 Nobody likes mosquitoes, least of all Lethane 384. That's why it moves in for a quick knockdown and high kill, attacking by land from fogging machines, swooping down in aerial fogging raids. To learn just how economical and effective it can be in the fight against mosquitoes, write to ROHM & HAAS CO., WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Two-Way Radio Parts Catalog

652 A 116-page Buyer's Guide covers two-way communications parts, kits and accessories for improving communications systems. It is profusely illustrated and is available from MOTOROLA COMMUNICATIONS AND ELECTRONICS, INC., PARTS DEPT., 4910 W. FLOURNOY ST., CHICAGO 44, ILL.

Emergency Electric Plants

653 Though power lines fail, you can still maintain essential community services: activate your Katolight standby generating sets. These dependable plants give power enough to assure that municipal operations continue "as usual." For information on ratings, sizes and models, write KATOLIGHT CORP., BOX 891-25, MANKATO, MINN.

Snaps Up Litter

654 Litter and trash in the gutter are quickly gobbled up by Tarco's Litter-Getter, Model GJS-1. Specially designed for vacuuming street gutters, this "Gutter-Vac" flows with traffic while doing its clean up work—all for about 20 cents per curb mile. For details on this handy, nimble unit, write TARRANT MFG. CO., 23 JUMEL PLACE, SARATOGA SPRINGS, N. Y.

Lightning-Fast Photocopying

655 The new Uni-Matic Auto-Stat, will help you bring your office modernization program up to date. Fast, compact and light weight, this one-step photocopier is not only simple to operate but copies from any original in any color. To discover the numerous ways in which it can save your municipal office operations time and money, ask AMERICAN PHOTOCOPY EQUIPMENT CO., DEPT. AC-58, 2100 W. DEMPSTER ST., EVANSTON, ILL., for a free booklet.

It Cares About Shade Trees

656 The John Bean 300 Rotomist is a natural for your large-scale municipal shade tree protection program. Really big in capacity, this mist sprayer delivers 60,000 cubic feet of air per minute through a 40-inch axial flow fan. At all times, the operator has full control. For details, write JOHN BEAN, DIV. OF FOOD MACHINERY & CHEMICALS CORP., LANSING 4, MICH.

Truckster Has Many Municipal Applications

657 Garbage collection, street cleaning, golf course maintenance, parking control and parking meter service are but a few of the many uses municipalities are finding for the Cushman Truckster 780, a light hauling vehicle that operates at a cost of less than one cent a mile. For details, write CUSHMAN MOTOR WORKS, INC., 946 NO. 21st, LINCOLN, NEBR.

Collapsible Voting Booths Save Space, Expense

658 With Douglas collapsible voting booths, secret balloting is obtained at nominal expense. Models of all-aluminum or of steel with aluminum shelving are available. These units can be stored economically; one metal storage case holds up to 5 booths. For additional information, write DOUGLAS MFG. CORP., DEPT. H, CRETE, NEBR.

Street Sweepers of Rugged Endurance

659 When funds are limited, street sanitation standards need not be compromised. For street cleaning the Mobil Sweeper way will give you outstanding sweeping performance at lower labor and maintenance costs, and will reduce deadheading. For details, write MOBIL SWEEPER, DEPT. AC-5, 3260 E. SHADSON AVE., LOS ANGELES 58, CALIF.

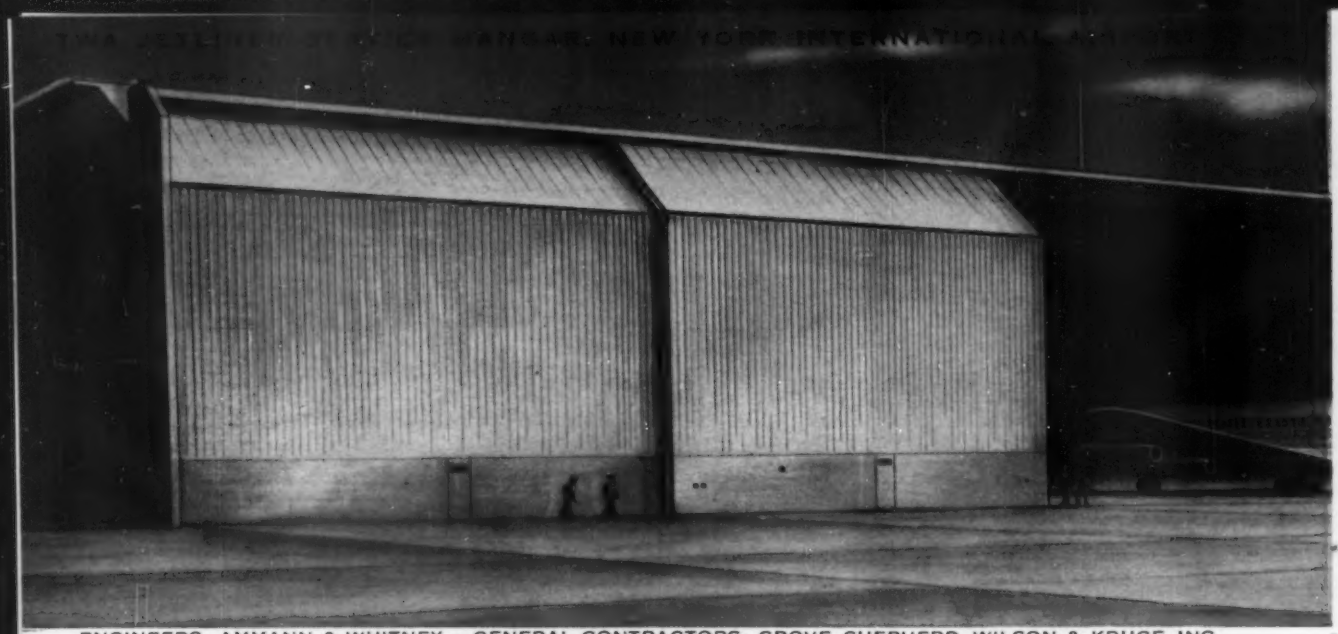
Power for Municipal Equipment

660 *Bulletin* S-223, which fully describes the complete line of Wisconsin Engines, will show you how to get more work hours and greater efficiency with fewer man-hours on municipal jobs. For your copy, write WISCONSIN MOTOR CORP., MILWAUKEE 46, WIS.

Buckets and Grapples for Refuse Handling

661 Planning a municipal incinerator plant? Then you'll find the latest revision of *Blaw-Knox Buckets and Grapples for Incinerator Service* of particular interest and a valuable aid. Comprehensive information and typical specifications for these units are included. For *Bulletin 2350-R-1*, write BLAW-KNOX EQUIPMENT DIV., BOX 1198, PITTSBURGH 30, PA.

(See page 38 for more Bulletins)



ENGINEERS: AMMANN & WHITNEY • GENERAL CONTRACTORS: GROVE, SHEPHERD, WILSON & KRUGE, INC.

PEELLE HANGAR DOORS

The TWA service hangar access door illustrated is 820 feet long and 50 feet high at the front. The Peelle horizontal sliding doors in this hangar are arranged in four banks of three door panels. These panels move in groups of three; with individual operators in each panel. Doors and canopies have corrugated aluminum skins. The canopies are part of the door structures.

Doors for two identical hangar openings were supplied for the TWA hangar. Peelle also manufactured and installed the doors for the Pan American Jetliner hangar and the Lockheed hangar, both at the New York International Airport, as well as the Motorstair in the terminal building.

PEELLE FOR DOORS · Freight Elevator Doors · Dumbwaiter Doors · Industrial Doors

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

Trustworthy Fire Equipment

662 If it's a Mack pumper, you can be certain that it's the ultimate in dependability. Quick to start, highly maneuverable and easy to handle, it will also be rugged—able to pump untiringly for long periods. For details on pumping engines and other finely wrought fire apparatus, write MACK FIRE APPARATUS, PLAINFIELD, N. J.

Automatic Parking

663 The "Ticket Spitter" will help you iron out the wrinkles in your municipal parking operations. It is automatic, and assures fast, smooth service to customers. It remains at the job 24 hours per day and, since no attendant is needed with this system, offers a savings in labor costs. For details, write AUTOMATIC PARKING DEVICES, INC., 10333 SHOEMAKER AVE., DETROIT 13, MICH.

Economical Municipal Power

664 White Superior dual-fuel engines permit municipalities to meet their power needs economically and with certainty. Ruggedly constructed and trouble-free in operation, these units are built for long service life. For information on capacities and special features, write WHITE DIESEL ENGINE DIVISION, SPRINGFIELD, OHIO.

Automatic Water Valves

665 This dependable line of water valves includes altitude, back pressure, float, pressure reducing, surge relief and combination units, complete with hydraulic and electric pilot controls. Send for catalog to ROSS VALVE MFG. CO., INC., 8 OAKWOOD AVE., TROY, N. Y.

Earthmoving Economy

666 The moderately priced Shawnee 88 backhoe digs powerfully, with speed and sureness. Bringing all its resources into play—180-degree swing, 16½-foot reach, 9¾ foot dumping height, 12 foot digging depth—this vigorous unit delivers top performance. For additional information, write SHAWNEE, 1947-U, N. TOPEKA AVE., TOPEKA, KANS.

Dependable Parking Meters

667 There's good reason why so many municipalities reorder "Mark-Time" meters when they consider expanding their parking meter operations. In the case of the "Mark-Time" Hurricane meter, it's dependable performance, trouble-free service, long life. For details, write M. H. RHODES, INC., HARTFORD, CONN.

Portable Conveyors for Materials Handling

668 There's a B-G portable conveyor of the correct length, proper capacity range, and with the right features and accessories to suit your needs. All are of sturdy construction, give trouble-free operation, and are easily towed from job to job. For special features, write BARBER-GREENE CO., AURORA, ILL.

Spreader for Ice Control

669 With the Baughman Model K5-5C, sand and cinder spreading operations are fully controlled. Spot spreading can be started or stopped in motion, as at intersections and safety zones; two-speed mechanism controls low and high volume spreading. For details, and for a free catalog on ice control, write BAUGHMAN MFG. CO., 142 SHIPMAN RD., JERSEYVILLE, ILL.

Fabrics for Municipal Uniforms

670 Outfit your municipal employees—firemen, police, park personnel—in uniforms made from sturdy Franklin fabrics. Whether you specify 2-ply 100% worsteds or worsted and dacron blends, you are certain to get uniforms of desired quality that will give long service. For details, write DAVID E. SINGER, SALES AGENT, FRANKLIN WORSTED CO., 40 E. 34th ST., NEW YORK 16, N. Y.

Playground Slides for Tots

671 In tot-lots and other municipal playground areas where space is at a premium, Burke's new Space-Saver Slide will be especially welcome. It offers just as much fun, but occupies ¼ the space of other comparable units. All-metal design assures utmost safety, low upkeep. The bedway is stainless steel, while other parts are finished in baked enamel and in bright colors. For details, write THE J. E. BURKE CO., DEPT. C., FOND DU LAC, WIS.

ARCHITECTURAL COORDINATION BY PORT OF NEW YORK AUTHORITY

engineered for modern airports

As large, specially designed doors of this character should be individually adapted to the structure, it is advisable to contact the Peelle Engineering Department early in the planning stage of each project. Inquiries are invited.

Write for illustrated technical brochure showing recent Peelle Hangar Door installations with engineering data.

ENGINEERED FOR THE BUILDING INDUSTRY
PEELLE-RICHMOND PRODUCTS

THE PEELLE COMPANY 47 Stewart Avenue • Brooklyn 37, N.Y. • Offices in Principal Cities

New Emergency Traffic System Gives Double Protection

672 With Eagle's new Beacon-Siren emergency traffic control system, warning and safety factors are doubled. For drivers not only see the flashing beacon that messages "clear the lane," they hear the siren warning, too. Complete details on these beacon-siren units, related equipment and their application are available from EAGLE SIGNAL CORP., MUNICIPAL DIV., DEPT. AC-458, MOLINE, ILL.

Mows Large Areas Easily

673 Worthington combination mowers cut clean, work efficiently and deliver the type of mowing required by any kind of turf—wet or dry, smooth or rough. They work fast, and are ideal for large-area mowing, such as fairways and putting greens, park lawns, steep highway cuts and fills. For details, and to arrange a job test, write WORTHINGTON MOWER CO., STROUDSBURG, PA.

Tractor-Shovels Do Everything

674 Hough Payloaders trench, lay pipe, black-top, dig and load, yet their versatility is continually being broadened by the development of quickly-interchangeable attachments. Two of the more recently devised attachments for these tractor-shovel units are the Superior Side Boom and the Ram Black-top Spreader, each of which has been field-tested and proved practical. For a free booklet detailing these and other attachments, write THE FRANK G. HOUGH CO., 710 SUNNYSIDE AVE., LIBERTYVILLE, ILL.

Life-Giving Traffic Stripes

675 In their fight to reduce nighttime traffic fatalities, numerous communities throughout the country are effectively using Cataphote Reflective Traffic Beads. Endowed with longer marking life, these highly reflective markers clearly indicate traffic lane boundaries, even on the darkest nights. For details, write CATAPHOTE CORP., TOLEDO 10, OHIO.

Quick Brush Disposal

676 Let a tree limb near an Asplundh brush clipper and it will be devoured almost instantaneously, for this unit works fast—faster, it is claimed, than any other chipper made. Safe and economical to operate, it makes municipal brush disposal simple and efficient. For details, write ASPLUNDH CHIPPER CO., 505 YORK ROAD, JENKINTOWN, PA.

Lawn Sprinkler Valves

677 Grit-proof, self-closing Quick-Coupling valves are easy to handle and help keep labor costs down. In combination with Turf King sprinklers, they give fast, maximum, efficient coverage over large turf areas. For details on both these units, write BUCKNER MFG. CO., INC., 1615 BLACKSTONE AVE., P. O. BOX 232, FRESNO, CALIF.

Portable Pumps

678 GORMAN-RUPP CO., MANSFIELD, OHIO, has just released four catalogs on pumps that will be of interest to municipalities of all sizes: (1) *Portable Pumps for Fire-Fighting;* (2) *Diaphragm Pumps,* featuring new design concepts; (3) *High and Dry Swap Pumps;* (4) '80' *Series Lightweight Portable Pumps.*

All-Around Municipal Workhorse

679 As power shovel, crane or hoe, Marion machines give well-balanced, low-cost performance that is sustained throughout the entire job. Street departments find Marions well suited for crown reduction work on gravel and asphalt streets, for gravel pit excavations, salt stockpiling, truck loading. Water departments use them for pipe stockpiling, loading, unloading, pipe line excavations. For the complete story, write MARION POWER SHOVEL CO., MARION, OHIO.

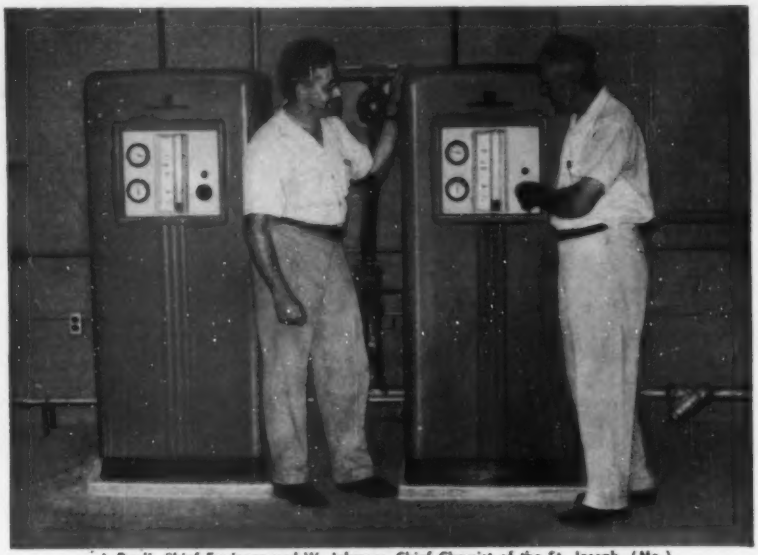
Hydraulic Slide Rule—Free Sample

680 A quick and accurate way to calculate the Hazen & Williams "C" value for pipe is to use a hydraulic slide rule. It eliminates the use of nomographs or formula, a long and involved procedure. For your free sample of this hydraulic rule, write CAST IRON PIPE RESEARCH ASSOCIATION, SUITE 3440, PRUDENTIAL PLAZA, CHICAGO 1, ILL.

All About Traffic and Street Signs

681 Traffic rolls smoothly, accidents are reduced and lives saved when streets and thoroughfares are clearly marked. Grimco's latest catalog offers traffic and street signs that are rust-resistant, long-wearing and highly legible. For your copy, write GRIMM STAMP & BADGE CO., 8102 ROSALIE AVE., ST. LOUIS 17, MO.

(See page 40 for more Bulletins)



J. Pauli, Chief Engineer and W. Johnson, Chief Chemist of the St. Joseph, (Mo.) Water Company, discuss operation of their W&T V-notch chlorinators. The St. Joseph Water Co. is part of the American Water Works Service Co., Inc. system.

W & T V-notch Chlorinators — doubly accepted

The St. Joseph Water Co. found breakpoint chlorination the best way to treat Missouri River water. But this increased the range of chlorine requirements in the water treatment. W&T V-notch chlorinators were the answer.

W&T V-notch chlorinators have a chlorine feed range of 20 to 1 with an accuracy of 4%. Based on this acceptance at its St. Joseph plant, the American Water Works Service Co., Inc. has purchased V-notch equipment for use in other plants.

V-notch chlorinators are available to feed from 2½ to 8000 pounds of chlorine per 24 hrs. V-notch equipment also provides permanence and attractiveness through modern reinforced plastics. For comprehensive information about W&T V-notch chlorinators, write for Bulletin S-122.

WALLACE & TIERNAN INCORPORATED

25 MAIN STREET, BELLEVILLE 9, NEW JERSEY

ELECTRO RUST-PROOFING CORPORATION

30 MAIN STREET, BELLEVILLE 9, N. J.

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

Stands Off Rust and Corrosion

682 M50 pigment paints possess a rust inhibition factor that is really significant—reportedly as much as 300% greater than that of some other anti-corrosive paint systems. Every coat—primer, intermediate, finisher—is insoluble in water and available in a number of colors. If the maintenance of steel structures is your responsibility, write NATIONAL LEAD CO., 111 BROADWAY, NEW YORK 6, N. Y., for its *Defense in Depth* catalog; it fully describes the benefits of these pigments.

Plywood Traffic Signs That Wear Well

683 The real advantage of high density overlaid plywood traffic markers lies not in low initial cost but in long-lasting performance qualities: strength, rigidity and workability; high resistance to weathering and acts of vandalism, ready acceptance and retention of paint or silk screen finishes and reflective sheeting. For details, write DOUGLAS FIR PLYWOOD ASSN., DEPT. 160, TACOMA 2, WASH.

Valves for Municipal Water Works

684 *Bulletin* 561 fully describes the Kennedy line of A.W.W.A. valves—bell end, flanged nonrising stem, outside-screw-and-yoke, etc.—designed to meet the stringent demands of modern municipal water works. For your copy, and to learn how your water works can benefit from these longer-lived, low-cost service valves, write to KENNEDY VALVE MFG. CO., 1601 E. WATER ST., ELMIRA, N. Y.

Stops Leaks in Sewer Pipe

685 An increasing number of cities are installing Press-Seal gaskets on new sewer pipe because they find it profitable. These packings give lasting seal, and so reduce replacement costs in sewerage systems. There is a P-S gasket for every sewage condition—oil, acid, common. For details and for a free, illustrated booklet, write PRESS-SEAL GASKET CORP., P. O. BOX 482, R. R. 6, COVINGTON RD., FORT WAYNE, IND.

Quality-Built Municipal Swimming Pools

686 Planning to enlarge summer recreation facilities by building a municipal swimming pool? Then now is the time to check with PADDOCK OF CALIFORNIA, 14606 ARMINTA ST., VAN NUYS, CALIF. For with a Paddock-built pool, your community will get the engineering integrity, skilled craftsmanship and equipment that will assure a pool of the highest quality.

Six Easy Steps to Street Stabilization

687 By following the new Sterling Salt "E-Z Plan" for road stabilization, you can repair and stabilize your community's gravel streets economically, and at the same time minimize recurring troubles of frost heaving, potholes, dust and costly loss of aggregate. For details on this six-step program, write INTERNATIONAL SALT CO., INC., DEPT. 83, SCRANTON 2, PA.

(See page 42 for more Bulletins)

Chain Link Fencing of Alcoa Aluminum Now Available Throughout U.S. to Help You Cut Maintenance

Chain link fencing of Alcoa® Aluminum, for highways, divider strips and rights-of-way, is a bigger bargain than ever: the premium you pay for aluminum now amounts to *less* than the cost of one routine painting of ordinary metal fencing.

From this point on, you're money ahead with aluminum. This was proved recently by examination of an aluminum fence installation in Pittsburgh. Installed 30 years ago in a continuously corrosive atmosphere, it is still standing today and will probably live to be 100! The aluminum still has its original structural soundness and rust-free good looks . . . has never cost a penny in maintenance.

Long-life, trouble-free installations like this are typical, but check the many other exclusive advantages you get with fencing of Alcoa Aluminum:

• **High Strength**—Average tensile strength of Alcoa's new alloy is 57,500 lbs./sq in.

• **Easy Erection**—Light weight means it goes up faster with less labor.

• **Enduring Beauty**—Aluminum ages to a pleasing, soft gray; never rusts or peels.

• **Readily Available**—Reliable manufacturers and erectors in all 48 states can supply Alcoa Aluminum fencing and accessories. For the name of the supplier in your area, contact your nearest Alcoa sales office.

Send for Complete Specifications!

Alcoa's A.I.A. File 14-K contains complete specifications and technical data. For your copy, write Aluminum Company of America, 1980-E Alcoa Building, Pittsburgh 19, Pa.

ALCOA ALUMINUM

Your Guide to the Best in Aluminum Value

"ALCOA THEATRE"
Exciting Adventure
Alternate Monday Evenings

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

Attractive Street Lighting Standards

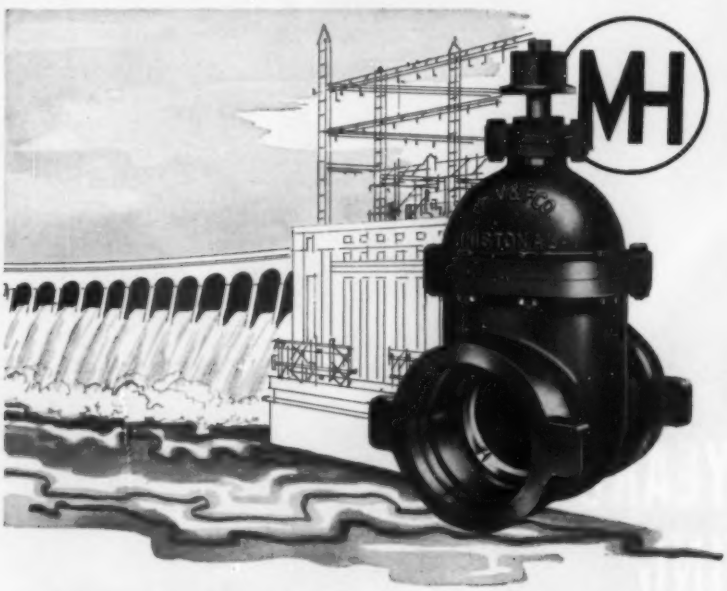
688 Strength, shape and attractiveness—three reasons why city, county and state officials, as well as engineers and architects, approve Kerrigan octagon-shaped light standards. Other features that recommend these aluminum and steel standards are discussed in a new catalog, available from KERRIGAN IRON WORKS, INC., DEPT. A-5, NASHVILLE, TENN. Write today for your copy.

Custom-Built Aerial Ladders

689 Whatever the aerial ladder needs of your municipal fire department, Seagrave will have a unit to meet your requirements. Quality-engineered, and custom-constructed, Seagrave apparatus delivers dependable, trouble-free and economical service. For details, write THE SEAGRAVE CORP., DEPT. AC-5-58, COLUMBUS 7, OHIO.

Variety Excavator

690 A crane, dragline and trench hoe with hydraulically-actuated bucket is announced by SHERMAN PRODUCTS, INC. It mounts with tie bolts on any conventional truck chassis with a G.V.W. of 19,500 pounds or more. The unit will lift up to four tons and has a boom of 20 to 40 feet. For further details, write the company for *Bulletin No.* 1076 at ROYAL OAK, MICH.



WATER — AMERICA'S MOST VALUABLE RESOURCE

Water has become a Number 1 problem in the United States. Americans are using water at a greater consumption rate than any other people in history. With population increasing faster than any other nation, it is estimated that by 1975 there will be 227 million Americans—requiring 50% more water than they do today.

Of all our natural resources, water is the one most essential to human existence. Yet water has been one of the least emphasized for research and development. That task now is sponsored by 23 national associations, two of which are American Water Works Association and the Water & Sewage Works Manufacturers Association, Inc., through an agency called The Water Resources Council. It deserves your whole hearted support.

M&H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA
SUBSIDIARY OF WALWORTH

Provides Faster, More Sanitary Refuse Collection

691 All kinds of refuse are handled safely and quietly without dripping and scattering when a Hydro E-Z Pack is used in refuse collection operations. Loading is done from both sides at once; bulky objects are easily crushed; and to save time the packer operates between stops. Full details can be obtained from HYDRO E-Z PACK, HERCULES GALION PRODUCTS, INC., GALION, OHIO.

Cleans Catch Basins Quickly, Efficiently

692 Effective and fast cleaning of catch basins is assured when a Good Roads Scavenger equipped with deep-snouted catch-basin attachment is at work sucking up twigs, bottles, cans and other debris in its big-capacity all-steel hopper. For additional information, write GOOD ROADS MACHINERY CORP., MINERVA, OHIO.

Economical Brush Disposal

693 Why do cities, highway and park commissions, tree surgeons and public utilities use Fitchburg chippers? Because they are efficient labor savers, cut brush disposal costs by as much as 50%, and get the job done quickly. You can learn more about these units by writing to FITCHBURG ENGINEERING CORP., DEPT. AC-58, FITCHBURG, MASS., for the fact-packed booklet, *Chip Dollars from Your Overhead.*

Speeds Street Construction

694 John Deere tractors and matching equipment will help you meet street construction and maintenance schedules and keep down costs. These earth-moving units stay at the job, delivering the right amount of power when and where needed. They handle easily and are versatile in application. For the model to suit your needs, write JOHN DEERE INDUSTRIAL DIV., DEPT. D-49-G, MOLINE, ILL.

Versatile Mowers with Proved Economy

695 Rugged, but simple in design, the Mott Hammer Knife mower will meet all your municipal mowing needs. Available in walk-behind, tractor-mounted and self-powered gang models, this equipment provides versatile, safe operation that is also economical. For additional information, write C. W. MOTT, 4017 EBERLY AVE., BROOKFIELD, ILL.

Pipe Threader

696 Pipe threading is done quickly and efficiently with the handy Toledo Drop Head Pipe Threader. Ideal for close-corner work, this ratchet threader speeds operations to save time and money. To change dies you simply pull a pawl, let the die drop out and insert a new one. For details, ask THE TOLEDO PIPE THREADING MACHINE CO., TOLEDO 4, OHIO, for *Bulletin* 4.

Essentials in Hazard-Warning Lighting

697 Whatever the specific hazard warning need, R. E. Dietz has an essential unit to meet it. Flare torches indicate the hazard and fully illuminate the danger in any weather (the stronger the wind, the brighter the flame). Lanterns outline hazard boundaries, clearly marking exact location. Visi-flashes alert motorists approaching from either direction. For an authoritative manual on this subject, write R. E. DIETZ CO., 114 LEAVENWORTH AVE., SYRACUSE, N. Y.

(See page 44 for more Bulletins)

This "General Ike" is a new 750-GPM Mack semi-cab, triple combination pumper. Unit is equipped with two top-mounted booster reels (each reel with 200' of ¾" booster hose and combination fog and straight stream nozzles), a 750-gallon booster tank and a wet water and foam proportioner.

"General Ike" takes over in Gettysburg

Named in honor of Gettysburg's first citizen, a Model B-85 Mack pumper has just gone into service for the Gettysburg, Pa., Fire Department.

Like all Mack apparatus, this new unit is five-star equipment—

- ☆ It's fast off the mark
- ☆ It's highly maneuverable... easy to handle
- ☆ It can pump for hours on end without a break or a breakdown
- ☆ It's rugged and safe
- ☆ It's the ultimate in dependability

From the finest, widest line of exclusive fire apparatus components known, Mack can custom build the exact apparatus you require: in standard or cab forward design; with the transmissions and gear ratios for your terrain; with generous locker space; and with any extras needed to cope with severe climates or other difficult conditions. If your increasing fire-protection needs call for better-built, better-designed apparatus, call on Mack. Mack Fire Apparatus, Plainfield, New Jersey. In Canada: Mack Trucks of Canada, Ltd.

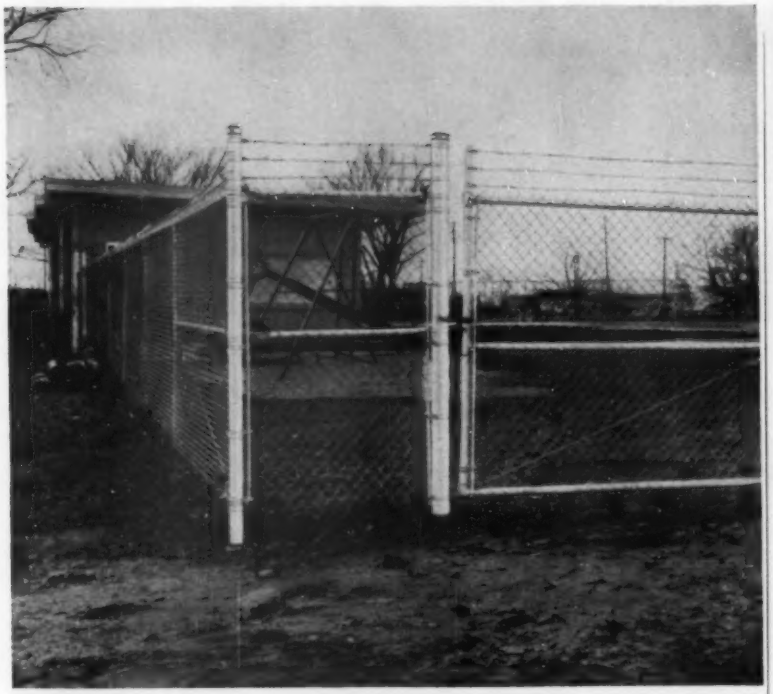
5838

MACK

first name for

FIRE APPARATUS

COMPLETE LINE OF PUMPERS—500 to 1250 GPM... SQUAD AND HOSE WAGONS... AERIALS 65' to 100'... COMBINATION LADDER TRUCKS



This fence will never rust, never need protective maintenance ...it's ALL ALUMINUM

All-aluminum chain link fencing is a long-term cost cutter. That's because, once installed, it can be forgotten. It will never rust or corrode—even in industrial areas where gases and fumes eat other metals away.

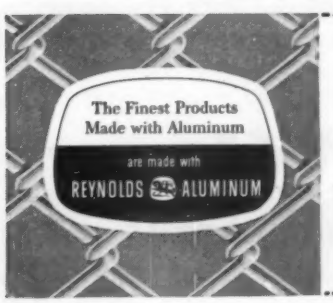
You *never* have to paint an all-aluminum fence, never have to replace sections because of rust or corrosion. It is good looking—and it stays that way.

Aluminum's lightweight strength can cut costs, too. All-aluminum fencing is easier to install, and it costs less to ship and handle.

Plan now for low maintenance costs for years to come—with rustfree, strong, corrosion-resistant all-aluminum chain link fencing, posts and fittings.

Watch Reynolds All-Family Television Program, "DISNEYLAND," ABC-TV

Get Details on All-Aluminum Fencing
Write Today for FREE Brochure



Reynolds Metals Company
P.O. Box 1800-NT, Louisville 1, Kentucky

Please send me your free brochure on All-Aluminum Chain Link Fencing.

Name

Company or Office

Address City

Zone State

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

Traffic Sign Faces—Special Offer

698 The practicability of including EZ-ON reflective sign faces in your municipal traffic control program is best demonstrated through use. The most economical way to discover the benefits to be derived is to accept the special offer being made by GRACE SIGN & MFG. CO., DEPT. CA, 3601 S. 2nd ST., ST. LOUIS 18, MO. Write today for details!

Refuse Incineration at Low Cost

699 Trying to find an economical solution to your municipal refuse disposal problem? Ask the engineers at DRAVO CORP., DRAVO BLDG., PITTSBURGH 22, PA., to show you how Dravo Continuous Flow Incinerators with water-wall furnace bring efficiency of operation and economy in first cost and maintenance to municipal refuse incineration.

Rehabilitates Small Water Transmission Lines

700 Water transmission and distribution lines of small diameter—6 inches to 14 inches—are economically restored to original flow and pressure capacity by Centriline's new machine, designed especially for this size pipe. For details, write for illustrated literature to CENTRILINE CORP., 100 CEDAR ST., NEW YORK 6, N. Y.

Eliminates Algae

701 When Berkite arrives, algae goes—quickly, quietly, without fight. For Berkite destroys microscopic algae spores in ten seconds, and gives no quarter to algae that has surfaced. Whether applied to lake, reservoir, pond or swimming pool, maximum kill is achieved. For additional information, write to MODERN SWIMMING POOL CO., INC., 1 HOLLAND AVE., WHITE PLAINS, N. Y.; request *Catalog* 12R.

Automatic Control of Chemical Feeders

702 The various systems in current use in municipal and industrial water treatment installations of automatically controlling the concentration of chemical additives are discussed in *Bulletin 3B-1-F P7*, available from OMEGA MACHINE CO., 345 HARRIS AVE., PROVIDENCE 1, N. Y.

Powerful Motor Graders

703 Power and weight have been blended so perfectly in the Huber-Warco 6-D & 7-D motor grader series that these 100- to 150-hp units can execute even very tough grading jobs quickly and efficiently. Greater work volume is made possible by constant power at the blade. For additional information, write HUBER-WARCO., DEPT. 5-AC, MARION, OHIO.

Improved Street Lighting Luminaires

704 Power-Pack, G-E's new 400-watt mercury luminaire with built-in ballast means dollar savings, simpler installation, easier maintenance, easier handling. It offers high lighting utilization (5% to 10% less power loss than conventional ballast circuits). For details, write GENERAL ELECTRIC CO., SCHENECTADY, N. Y.

(See page 48 for more Bulletins)

Cutting costs is the primary function of portable conveyors

To make the greatest cost savings, portable conveyors must:

. . . have quality construction for long life and trouble-free operation. They must be available in the length and capacity range to suit your needs. They must be available with the features and accessories you want—screens, power hoists, pneumatic or steel wheels, gas or electric drives, etc.

easily towed from job to job. They must withstand constant use and frequent movement.

Shown above is the portable conveyor of advanced design, the Barber-Greene 363. Shaft and gear reducer drive—no chains—no sprockets, full swiveling wheels, Acme take-ups and many other exclusive features.

Shown below are other models in Barber-Greene's complete line of cost-cutting conveyors.

Model 374 cuts cost at high capacity. With capacities up to 425 t.p.h., this heavy-duty machine has antifriction bearings, shaft and gearbox drive, hydraulic boom hoist and other features.

Model 358 cuts cost of car unloading. Feeding a conveyor, this car unloader releases cranes and other expensive equipment for other work. Handles gravel, sand, stone, cinders, etc.

Model 362—low-cost, high-quality portable. Three-roll carriers, swivel wheel truck, and many other features not available on conveyors of this low-price range, are standard on the 362.

56-8-PO

Barber-Greene BG

AURORA, ILLINOIS, U.S.A.

CONVEYORS . . . LOADERS . . . DITCHERS . . . ASPHALT PAVING EQUIPMENT

won't

"RECKON WE'LL HAFTA CUT YORE WHISKERS LOOSE, PAW... THESE TYTON JOINTS IS TIGHTER'N GRAN'MAW'S CORSET."

U.S. cast iron PIPE

FOR WATER, SEWERAGE AND

let go!

Grandpaw's whiskers are proof! Tyton Joint® pipe seals permanently and bottle-tight.

It's easy to assemble, too. A specially designed rubber gasket fits into the bell of the receiving pipe. When the connecting pipe slides into place the gasket is compressed and presto!... a perfect fit! No bell holes, no caulking, no nuts or bolts to fasten. Even green crews look expert in handling it. Tyton Joint pipe doesn't mind the weather, either. You can lay it in rain or a wet trench when you have to.

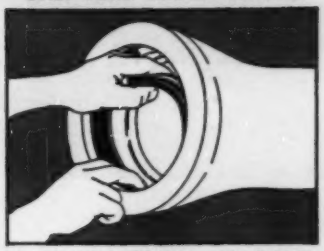
Call or write today and get *all* the facts about Tyton Joint pipe. Facts that can save you money, time and trouble.

U. S. PIPE AND FOUNDRY COMPANY
General Office: Birmingham 2, Alabama

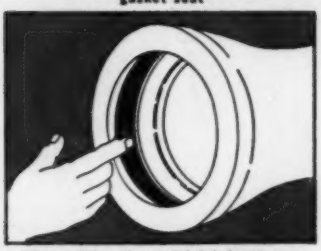
A WHOLLY INTEGRATED PRODUCER FROM MINES AND BLAST FURNACES TO FINISHED PIPE

TYTON

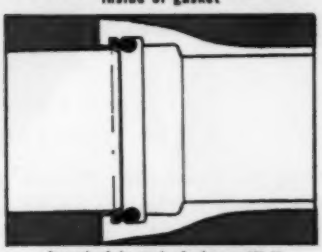
ONLY FOUR SIMPLE ACTIONS



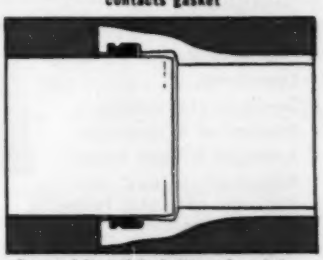
Insert gasket with groove over bead in gasket seat



Wipe a film of special lubricant over inside of gasket



Insert plain end of pipe until it contacts gasket



Force plain end to bottom of socket... the job's done!

12" Tyton Joint pipe for water line in Florida

INDUSTRIAL SERVICE CAST IRON

MI-CO PARKING METERS are winning acclaim everywhere

they are . . .

- **Dependable**
- **Rugged**
- **High producers**
- **Long-lived**
- **Simple in construction**
- **Economical to maintain**
- **Arranged for split timing**
- **Adjustable to any coin and one coin slot takes all denominations**
- **A good investment for any size town or city**

Get all the facts. You'll be pleasantly surprised at MI-CO's outstanding records for low-cost upkeep and high earnings.

We'll also be glad to send complete information on MI-CO's Coin Collection System. It's fast, dependable, tamper-proof—saves time and money, and is adaptable to MI-CO Manuals already installed.

A Symbol of High Quality M ABC

MI-CO PARKING METERS, P.O. BOX 668-AC, COVINGTON, KENTUCKY

(The Michaels Art Bronze Co., Inc.)

OTHER MICHAELS PRODUCTS: Architectural Metal • Curtain Walls
Display Cases • Reversible Windows • Tablets • Memorials • Signs

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

Assures Water-Tight Pipe Joints

705 Tylox rubber gaskets will help your community stretch its tax dollars. With them, sewer pipe is installed faster, coupling accomplished more quickly, and backfilling speeded. They assure leak-proof joints, keep roots and sediment out and thus help reduce pumping load costs. For details, write HAMILTON KENT MFG. CO., 427 WEST GRANT ST., KENT, OHIO.

Easy-To-Read Traffic Sign Finish

706 Brilliance, readability, dependability —the three prime factors that recommend Prismo "200" Hi-Reflective Sign Finish to municipal traffic control programs. In addition, they are weather-resistant, will not peel and may be applied in several ways. For details on this low-cost finish, write PRISMO SAFETY CORP., HUNTINGDON, PA.

Big Beam Flasher for Hazard Warning

707 A new, Big Beam transistor-type, heavy duty barricade flash with built-in safety and economy features is now available from U-C-LITE MFG. CO., 1050 W. HUBBARD ST., CHICAGO 22, ILL. Called the Transista Flash Model 410 T, it offers a high degree of visibility, has a 2-directional head, and is specially weather-proofed. For details, write the company.

Quality-Built Water Meters

708 Simplicity of design and rugged construction backed by sound engineering make American water meters top-performing measurement units. For complete details on these quality-built meters, write BUFFALO METER CO., 2902 MAIN ST., BUFFALO 14, N. Y.

Gate Valves Control Sewage Collection

709 If top performance is the keynote in your sewage pumping station, then there's a place for Darling gate valves, available in a wide range of sizes and types for all normal and unusual services. These mechanisms are explicitly described in *Bulletin* 5710. For your copy, write DARLING VALVE & MFG. CO., WILLIAMSPORT 10, PA.

Centrifugal Pumps for Every Service

710 *Bulletin* 108, just received from FREDERICK IRON & STEEL, INC., describes the important engineering and construction features of Frederick centrifugal pumps. Designed to give continuous and satisfactory service, these units are applicable to both municipal and industrial services. For your copy of *Bulletin* 108, write the company at FREDERICK, MD.

Bleachers and Grandstands

711 Whatever your spectator seating needs, SAFWAY STEEL PRODUCTS, INC. will no doubt be able to meet them. Permanent or portable equipment, for large or small installations, indoor or outdoor use, are designed for maximum safety, visibility and comfort. They are durable and economical. For details, write the company at 6228 W. STATE ST., MILWAUKEE 13, WIS.

(See page 52 for more Bulletins)

CITY WORKHORSES

As part of a program of expansion and improvement, two 3/4-yard Marions purchased less than a year ago have proved they are good performers on a variety of street and water department jobs in Dayton, Ohio.

In fact, people connected with the Marions report they are good all around machines—powerful and well balanced with good control.

Both machines are equipped with air control and torque converter for hoe, clam, crane and dragline operation. Both perform a variety of jobs.

The machine assigned to the street department is used for crown reduction on gravel and asphalt roadways, gravel pit excavation, salt stockpiling and truck loading. The water department machine has so far been used mainly for pipe line excavation, gravel excavation and loading, pipe stockpiling, loading and unloading. Both machines are kept busy on an average of 8 hours a day, 5 days a week.

Get the complete story on the Marion 35-M . . . let your Marion Distributor prove to you why it is the machine you'll want to buy for city utility work.

You get **MORE** *with* **MARION**

TODAY'S MARIONS GIVE YOU MORE IN SUSTAINED, LOW-COST PERFORMANCE

MACHINE	Shovel Capacity	AVAILABLE AS . . .			
		Hoe	Crawler Crane	Truck Crane	Special Crane
35-M	¾	Yes	Yes	Yes	—
43-M	1	Yes	Yes	Yes	—
362	1½	Yes	Yes	—	Yes
93-M	2½	Yes	Yes	—	Yes
101-M	3	—	Yes	—	—
111-M	4	—	Yes	—	—

MARION POWER SHOVEL CO. • MARION, OHIO
A Division of Universal Marion Corporation

Send me information about MARION ..... yard shovels, ... yard hoes and ..... ton cranes (☐ crawler mounted ☐ truck mounted).
☐ Have a salesman call.

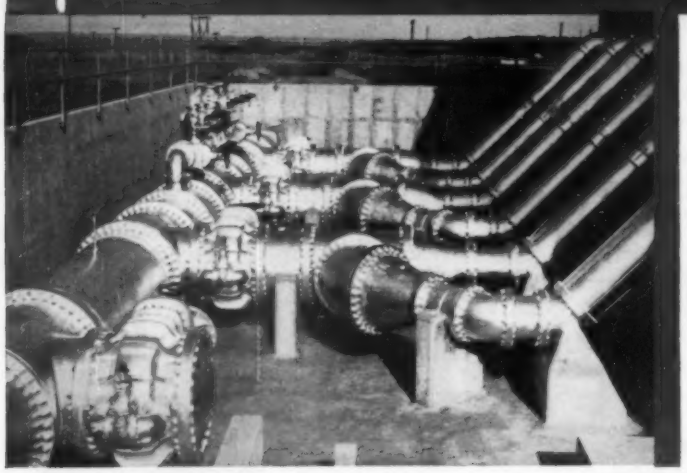
Name ..... Title .....

Company .....

Street .....

City ..... Zone ..... State .....

STRENGTH PLUS



Chicago, Ill.—Cast Iron Pipe for installation of new water main under West Madison Street.

Corpus Christi, Texas—Cast Iron Pipe installation in filtration plant showing 48" discharge manifold which is connected to 48" Cast Iron city supply line.

THE MAN WHO CHOOSES
CAST IRON PIPE TODAY
WON'T PAY FOR IT AGAIN
TOMORROW!

CAST IRON

Cast Iron Pipe Research Association
Thos. F. Wolfe, Managing Director
Suite 3440, Prudential Plaza, Chicago 1, Ill.

MODERNIZED **cast iron**

HIGH FLOW

You get BOTH with CAST IRON PIPE

*Here's the proof of flow

FLOW FACTORS FOR CEMENT LINED CAST IRON PIPE

LOCATION	SIZE	TEST SECT. IN FEET	VELOCITY F.P.S.	AGE YEARS	W & H "C" FACTOR
Bowling Green, Ohio	20"	45,592	0.7-2.4	New	142.5
Chicago, Illinois	36"	7,200	2.6-3.6	New	147
New Orleans, La.	12"	39,650	1.2-2.9	New	141
Corder, Mo.	8"	21,350	0.9-2.3	New	143
Univ. of Illinois	8"	400	3.14	New	150
Concord, New Hamp.	14"	500	1.7-2.2	New	151
Concord, New Hamp.	12"	500	2.0-3.4	11	142
West Palm Beach, Fla.	12"	500	3.6-5.4	15	139.5
Greenville, S. C.	30"	87,376	2.4-2.7	12	148.5
Corpus Christi, Tex.	30"	65,641	1.1-1.8	6	146
Summerville, S. C.	8"	500	1.98-2.43	13	142.5
Champaign, Illinois	16"	3,920	3.1-5.6	22	139.3

*Available upon request: Booklet containing flow test and tables on Cast Iron Pipe.

Here's the proof of strength

1. CRUSHING STRENGTH* · · · Standard 6" Class 150 cast iron pipe will withstand a crushing load, under standard tests, of 17,900 pounds per foot . . . important where heavy fill or shock from heavy traffic loads are encountered.
2. BEAM STRENGTH* · · · Settlement soil movement, or disturbance of the soil by underground construction places a heavy strain on pipe. A length of 6" class 150 cast iron pipe bears up under a load of 20,790 pounds and deflects over 2¼ inches.
3. BURSTING STRENGTH* · · · Tests prove that standard 6" class 150 cast iron pipe withstands internal pressure of 3000 pounds per square inch . . . providing a safety factor ample to resist high working pressures and water hammer.
4. JOINT STRENGTH · · · A full range of leak-proof, low cost, easy-to-assemble joints for pipe and fittings are available to meet all conditions.
5. CORROSION RESISTANCE · · · Cast Iron Pipe resists corrosion . . . vital factor in its proven long life and dependability.

*Based on independent laboratory tests.

pipe FOR MODERN WATER WORKS

Send a TRUCKSTER® instead of a Truck!

Cushman® 780

World famous for economy

Garbage collection is only one of many areas of municipal service where substantial savings are currently being made through the use of a Cushman 780 Truckster as a replacement for, or auxiliary to, a conventional truck.

Other municipal jobs which the 780 Truckster handles with maximum efficiency and economy include street cleaning and light maintenance; parking control and parking meter service; golf course maintenance; hauling of supplies; and as a service vehicle.

Ruggedly built and driven by the powerful Cushman Husky 4-cycle engine, the 780 Truckster handles an 800 pound payload with ease. It not only operates at a cost of less than a penny per mile, but requires a minimum of maintenance expense; and, in many instances, saves man-hours by converting a "walking" job into a "riding" job.

The 780 Truckster is available with fiber glass cab and side curtains as optional equipment, and in a variety of body styles to fit specific needs. Electric starter is also available.

Ask your dealer for FREE demonstration or write for complete details on how the 780 Truckster can serve your city.

SOLD AND SERVICED NATIONALLY
Replacement parts available immediately

CUSHMAN MOTOR WORKS, INC.
A subsidiary of Outboard Marine Corporation
946 No. 21st, Lincoln, Nebr.

Please send complete information on 780 Truckster

NAME _____

ADDRESS _____

CITY _____ STATE _____

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

Improved Water Conditioning for Your City

712 Demineralization, one of the more important phases of water treatment is fully discussed in a newly revised and enlarged bulletin from GRAVER WATER CONDITIONING CO., 216 W. 14th ST., NEW YORK 11, N. Y. Application, basic principles, comparison of different types of demineralizers and automatic control, are some of the items discussed. For your copy of *Bulletin* WC-111A, write the company.

Reduces Accidents in Plants and Buildings

713 You're inviting accidents and serious injury to personnel if stairways and walkways in municipal plants and buildings are worn, chipped or broken. But you can prevent such danger by using Wooster stair treads. Easy to install and long wearing, they provide economical and practical repair. For details, ask WOOSTER PRODUCTS INC., WOOSTER, OHIO, for their *Safety Tread* booklet.

Controls for Water, Sewage Plants

714 Water and sewage works operators will find controls to meet nearly every plant requirement in the Autocon *Buyer's Guide*. Fully described as to purpose, application, and specifications, it includes controls for pressure, liquid levels and telemetering. For your copy of this valuable booklet, write AUTOMATIC CONTROL CO., ST. PAUL 4, MINN.

Maintenance-Free Traffic Sign Structures

715 Whether of tubular truss design or single chord span, Aloca Aluminum overhead sign structures are completely maintenance-free. They never need painting, and defy corrosion. They are easy to install, and although light in weight can withstand winds up to 100 mph. For detailed information, write ALUMINUM COMPANY OF AMERICA, 1680-E ALCOA BLDG., PITTSBURGH 19, PA. Ask for the booklet on *Aluminum Traffic Control Devices*.

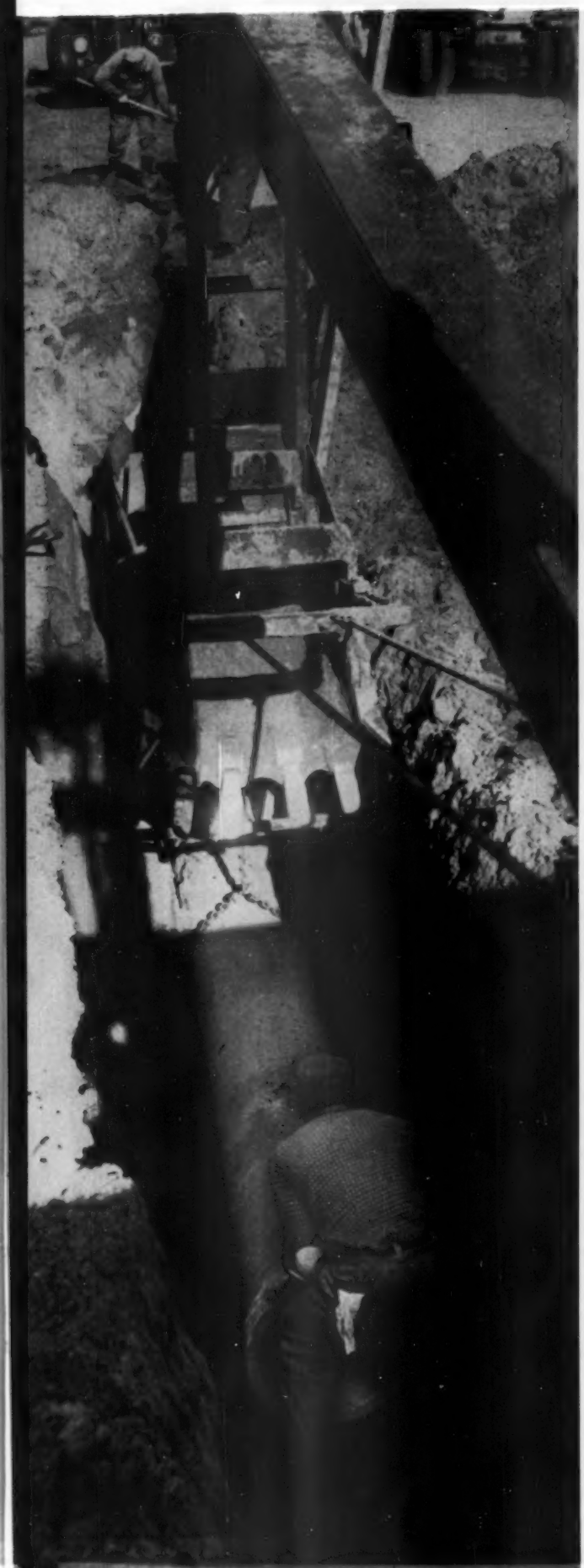
Eliminates Odors—Free Sample

716 When Ozene strikes, odors and the many complaints they bring disappear. Quickly, easily, economically Ozene masks odors while it attacks the causes—sulphide-forming bacteria and mold microorganisms. To learn how this concentrate can help you keep municipal sewage, refuse and waste disposal plants and equipment odor free—and for a test sample—write SOLVAY PROCESS DIV., 61 BROADWAY, NEW YORK 6, N. Y.

Saves Wear and Tear on Vehicles

717 To save on gas, tires and repairs, and to assure all-around economy on 4-wheel drive equipment, use Warn hubs. The Lock-O-Matics will "shift for themselves"; the Locking Hubs will permit you to "dial the drive." For details, and to take the drag, whine and wear out of 2-wheel drive as well, write WARN MFG. CO., INC., RIVERTON BOX 6-064AC5, SEATTLE 88, WASH.

(See page 57 for more Bulletins)



2 ways to lay prestressed concrete steel cylinder pipe

Here in Bossier City, La., the Yor-Wic Construction Co. of Shreveport is using two methods to install a 16 and 20-inch water line. At left the backhoe has dug the trench, lowered the 16-foot length of pipe, and is now shoving it home. In the picture above, where lightweight equipment was advisable, a tractor mounted backhoe has dug the trench, and a truck-mounted crane handles the pipe. The easy-to-make steel-and-rubber joint, and the extraordinary strength of this type pipe made both methods fast.

You can't see the reason for this pipe's strength because it is completely encased in concrete. Inside is a leakproof steel cylinder wrapped with high-tensile steel wire. It not only makes this pipe safe to handle, but gives it tremendous resistance to the effect of traffic loads, shifting soil, and sudden internal pressures. It is just about the longest-lasting and toughest all-around pipe you can get.

The high strength and long life advantages of this pipe offer the same benefit for Bossier City's new 16-inch sewer force main. Contractor for the sewer line is P & S Construction Co. of Shreveport. Engineers for both lines are Demopulos and Ferguson of Shreveport. Resident engineer is Donald Downs.

Pipe was manufactured by Price Brothers Company with headquarters plants in Hattiesburg, Miss. for the South and Dayton, Ohio for the North.

Price Brothers

International Cub-Lo-Boy with center-mounted 60-inch rotary mower—saves up to $1,000 compared with larger tractors and equipment having no greater mowing capacity.

With International® power, you can specify any of 66 tractor-mower combinations!

Fine turf, tall grass, rank weeds—for any type mowing of any size area, you can meet your mowing specifications exactly with an International® tractor. Seven tractor models, ranging from 10 to 45 hp, let you avoid both under-powering and over-powering. Then, match your size of tractor to any of four mower types, in a wide range of sizes . . . there are 66 tractor-mower combinations from which to select! The table below makes it easy to analyze the best combination for your specific needs—and stay within your budget.

ONLY YOUR IH DEALER PROVIDES THIS WIDE SELECTION

From the low-cost, 10 hp International Cub®-Lo-Boy®, to the rugged, 45 hp 350 Utility, your IH Dealer offers the industry's most complete line of tractors for mowing and other park and municipal needs. Equally important, he stands back of the equipment he sells with parts and service facilities *unequaled anywhere!*

INTERNATIONAL TRACTOR MODELS	BELT HP	MOWER TYPES AND SIZES			
		CUTTER BAR	ROTARY	HAMMER KNIFE	GANG REEL
Cub Lo-Boy	10.8	5-ft (S)	(C) 42, 60-in. (R)	(S) 48-in. (R)	(C) (S) 3-gang (R) (T)
Farmall Cub	10.8	5-ft (S)	(C) 42, 60-in. (R)	(C) 48-in. (R)	(C) (S) 3-gang (R) (T)
I-130	23.1	5, 6, 7 ft (S)	(C) 42, 46-in. (R)	48-in. (C) 60-in. (R)	5-gang (T)
F-230	29.2	5, 6, 7 ft (R)	54-in. (C)	60, 72-in. (R)	
I-330 Utility	35.2	(S) 5, 6, 7 ft (R)	61-in. (R)	60, 72-in. (R)	7-gang (T)
*I-350 Utility	44.9	(S) 5, 6, 7 ft (R)	61, 80-in. (R)	60, 72-in. (R)	5-gang (C, R) 7-9-gang (T)
*F-350	42.4	5, 6, 7 ft (R)	94-in. (C)		

(C) Center-mounted (R) Rear-mounted Fast-Hitch (S) Side-mounted (T) Trailing *Diesel, LPG models available

Your IH Dealer will demonstrate! Look in the classified directory, phone today for a convenient date.

SEE YOUR

INTERNATIONAL HARVESTER DEALER

International Harvester Products pay for themselves in use—Farm Tractors and Equipment . . . Twine . . . Commercial Wheel Tractors . . . Motor Trucks . . . Construction Equipment—General Office, Chicago 1, Illinois.

Postage Will be Paid by Addressee

No Postage Stamp Necessary if Mailed in the United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT No. 201, SEC. 34.9 P. L. & R., NEW YORK, N. Y.

THE AMERICAN CITY MAGAZINE

470 FOURTH AVENUE

NEW YORK 16, N. Y.

DO YOU HAVE A WATER SUPPLY PROBLEM?

If you need information on any type of municipal service or equipment, these reply cards will get action in a hurry.

To THE AMERICAN CITY's Catalog Supply Department:
Please send me literature on items numbered as follows, starting on page 34

640	651	662	673	684	695	706	717	728	739	750
641	652	663	674	685	696	707	718	729	740	751
642	653	664	675	686	697	708	719	730	741	752
643	654	665	676	687	698	709	720	731	742	753
644	655	666	677	688	699	710	721	732	743	754
645	656	667	678	689	700	711	722	733	744	755
646	657	668	679	690	701	712	723	734	745	
647	658	669	680	691	702	713	724	735	746	
648	659	670	681	692	703	714	725	736	747	
649	660	671	682	693	704	715	726	737	748	
650	661	672	683	694	705	716	727	738	749	

I would also like to receive manufacturers' booklets on.....

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Name: (Please Print).....

Title:.....

Address:.....

..... 5-58

A listing of Your Business Connection is Important

To THE AMERICAN CITY's Catalog Supply Department

Please send me further information on products described in "Purchasing News" section beginning on page 223 as circled below:

781	786	791	796	801	806	811	816
782	787	792	797	802	807	812	817
783	788	793	798	803	808	813	818
784	789	794	799	804	809	814	819
785	790	795	800	805	810	815	820

I would also like to receive manufacturers' booklets on.....

.....

.....

.....

Name: (Please Print).....

Title:.....

Address:.....

.....5-58

A listing of Your Business Connection is Important

IT'S NO ILLUSION

Postage Will be Paid by Addressee

No Postage Stamp Necessary if Mailed in the United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT No. 381, SEC. 34.9 P. L. & R., NEW YORK, N. Y.

THE AMERICAN CITY MAGAZINE

470 FOURTH AVENUE

NEW YORK 16, N. Y.

Save time and effort by using these reply cards when you want additional information on any product or service mentioned or advertised in this issue.

Let a fellow engineer show you: Salt stabilized gravel roads are best

Get first-hand proof that roads stabilized with Morton Salt last longer, cost less to maintain.

One of your neighboring county engineers probably has used Morton Salt to stabilize roads in his district, and will be glad to show you the big difference salt stabilizing makes.

Regardless of the materials used, roads stabilized with Morton Salt give more service per dollar than roads built by any other method. And your fellow engineer can tell you that the savings in aggregate alone more than pay for the salt. You get smooth, durable, water-repellent surfaces that require minimum maintenance.

Get all the facts

Mail the coupon today for more details about salt stabilized roads. We'll also send the name of a county engineer in your area who can show you the results he has obtained by using salt stabilization to build roads.

☐ *Please send me your free booklet on salt stabilized roads.*

☐ *I also would like the name of a county engineer near me who has used salt to stabilize roads.*

Name_____
(Please print)

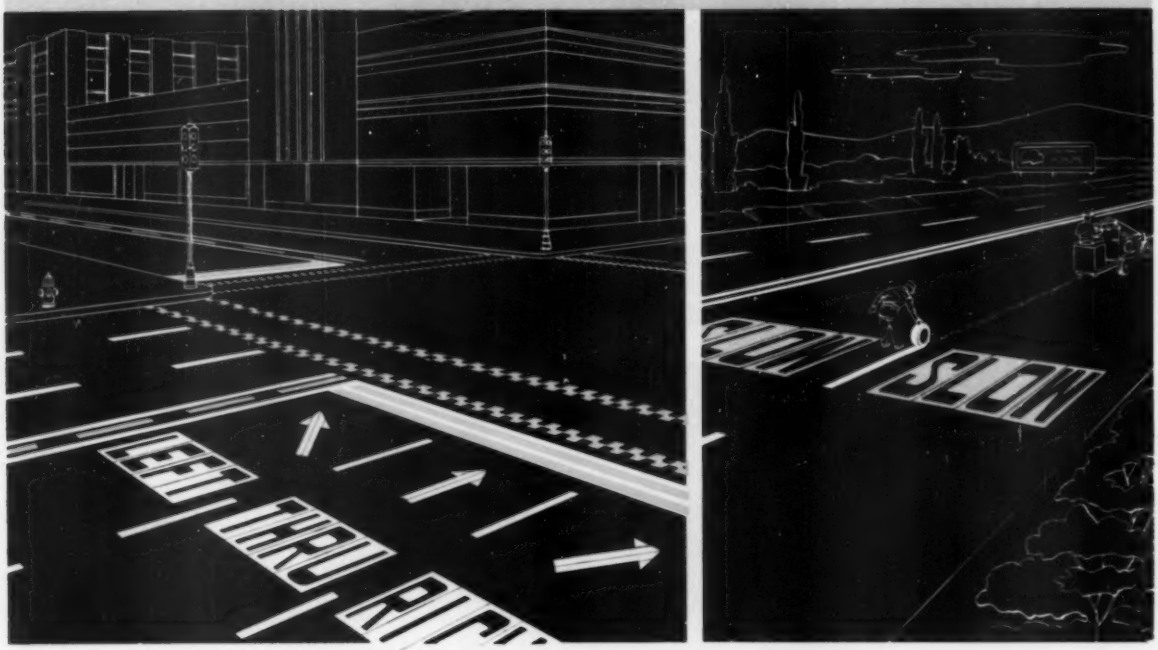
Title_____

Address_____

City_____ **Zone**____ **State**_____

MORTON SALT COMPANY
INDUSTRIAL DIVISION
Dept. AC-558, 110 N. Wacker Drive, Chicago 6, Illinois

Down Fast – Stay Fast!



use DOUBLY-FAST, PRECOATED

plastic **NEFSLABS** *and* **NEFMATS**

NEFSLABS®
TRAFFIC MARKERS, STRIPS, ARROWS

NEFMATS®
ONE-PIECE TRAFFIC LETTERS

NEW FAST APPLICATION

Now available with a factory coating of adhesive already on their backs for faster and easier application, NEFSLABS and NEFMATS are becoming more popular than ever for all traffic marking. Time and cost are reduced to a minimum by this new precoating feature which eliminates adding any adhesive on the plastic itself.

Our cold, quick-drying adhesive sprayed or brushed on the street surface securely bonds precoated NEFSLABS and NEFMATS in place.

NEW CONVENIENT LENGTHS

Precoated plastic strips are now available in 25 and 50-foot lengths . . . and 3, 4, and 6-inch widths. These new lengths and the precoating feature make strip-type NEFSLABS the most modern and economical marking method.

Spraying our adhesive on the streets through a striping machine and then simply rolling these convenient precoated strips into place mean much faster installation. So, permanent-type NEFSLABS offer doubly fast application and more than double service for marking lanes and center lines especially.

Colorful **NEFSLABS** and **NEFMATS** literature is available

New Sales Territories are Open for Capable Representatives.

J. W. NEFF LABORATORIES, INC.

TRAFFIC MARKINGS DIVISION
STOCKERTOWN 6, PENNSYLVANIA
In Canada: 465 ST. JOHN ST., SUITE 2B, MONTREAL 1, CANADA

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

All-Aluminum Fencing Saves Maintenance Expense

718 Low maintenance is assured with rustfree, strong, corrosion-resistant all-aluminum chain link fencing, posts and fittings. Once installed, these units can virtually be forgotten, yet will continue to satisfactorily protect your municipal property. For details, write REYNOLDS METALS CO., P.O. BOX 1800-NT, LOUISVILLE 1, KY.

Quick-Adjusting Sewer Cleaner

719 Expanding's root cutter-sewer cleaner can be adjusted in 30 seconds to fit any sewer from 8 to 30 inches in size. Once at work, it will clean the entire sewer wall, top as well as sides and bottom, cutting and removing roots and caked sediment, restoring the sewer to a nearly 100% clean condition. For details, and a new catalog on sewer cleaning equipment, write EXPANDING SEWER MACHINE CO., 108 E. WALNUT ST., NAPPANEE, IND.

Better Street Lighting at Less Cost

720 That's what your primary streets will have when you install Westinghouse OV-35 luminaires for color-improved fluorescent mercury lamps. For details, and for assistance in obtaining the best possible street lighting for your community, write WESTINGHOUSE ELECTRIC CORP., STREET LIGHTING DIV., EDGEWATER PARK, CLEVELAND, OHIO. Ask, also, about the OV-10 luminaire for residential street lighting.

Portable Power Plants Lighten Work Load

721 Street repair work, park maintenance, pipe threading and cutting—whatever the municipal job application—are accomplished more easily when a Kohler electric plant supplies the power. These units, which are also available as automatic stand-by plants when central station power fails, come in various sizes. They are fully described in *Folder* A-21; for your copy, write KOHLER CO., KOHLER, WIS.

Trucks for Your Municipal Needs

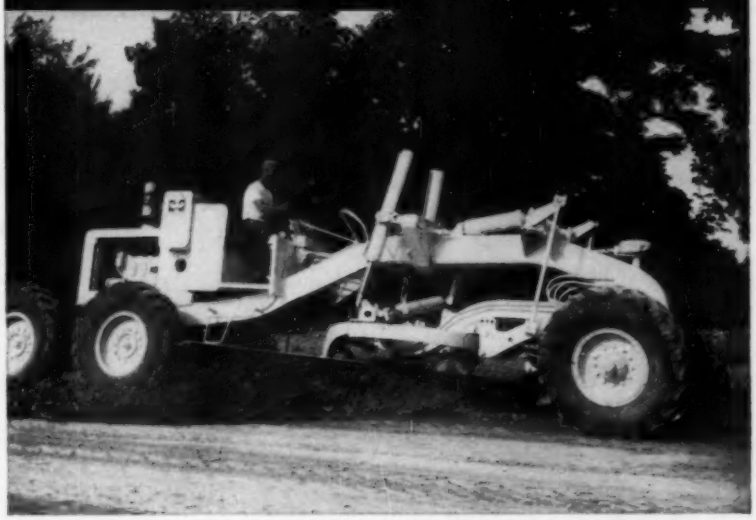
722 *A Guide to Proper Truck Selection for Your Construction Work* will help you determine the right trucks for your municipal operations. Prepared by FORD DIV., FORD MOTOR COMPANY, P. O. BOX 658, DEARBORN, MICH., the 20-page booklet includes pick up units as well as a new series of extra-heavy duty trucks designed to tackle big, tough jobs.

New, Power-Matched Industrial Equipment

723 Massey-Ferguson has power-matched its Work Bull and Davis line of tractors, loaders, fork lifts and attachments to help you save on manpower and equipment expenditures. *Brochure* G-4 tells the complete story of these versatile machines which have just been introduced. For your copy, write MASSEY-FERGUSON INDUSTRIAL DIVISION, 1009 S. WEST ST., WICHITA 13N, KANS.

(See page 59 for more Bulletins)

HUBER-WARCO
motor graders



balanced weight and power

The Huber-Warco 6-D & 7-D MOTOR GRADER series has been designed with the right blend of weight and power to handle tough grading quickly and efficiently. A combination of torque converter, tail-shaft governor and power-shift transmission assures constant power at the blade for a greater work volume. Horsepower range of the Huber-Warco 6-D & 7-D MOTOR GRADERS is 100 to 150 h.p. Your Huber-Warco distributor would like to show you the many other features of these modern graders. Contact him today.

MAINTAINER

MOTOR GRADERS

TANDEM ROLLERS

3-WHEEL ROLLERS

Products of HUBER-WARCO COMPANY, Marion, Ohio, U. S. A.

HUBER-WARCO COMPANY, Marion, Ohio, U.S.A.
Send me specifications on the Huber-Warco
☐ 6-D & 7-D series ☐ other motor graders
Send specifications on: ☐ Maintainer
☐ Tandem Rollers ☐ 3-Wheel Rollers

Name _____
Title _____
Company _____
Address _____
City _____ Zone ____ State _____
5-AC

HUBER W WARCO

TWO "FIRSTS" BY FLEX-O-LITE

1

To make your Budget for Reflectorized Signs go Farther . . .

NEW 831 IMPROVED GLASS BEADS

For high quality and low cost applications to Traffic Signs, Street Name Signs, License Plates

Now, thanks to better research and engineering, your signs can have the ultimate in long range reflectivity, plus day and night message legibility never before obtainable at any price. Applied at economical cost and "permanized" with Flex-O-Lite's amazing "STORMCOTE", protective covering agent, you get new highs in weather, water, dirt and wear resistance, plus *nearly 90% angularity!* Put the new Flex-O-Lite 831 Reflective Sign System to the test in your own shop. Details in our new bulletin. Write today.

Available in "extra-fine" grade for Street Name Signs and License Plates. Affords extra velvet-smooth finish for added dirt and wear resistance, and greater economy.

2

Savings in Time • Money and Labor Insured*

FLEX-O-LITE

FREE-FLOWING GLASS BEADS

*The result of five years of research and development. Field tested for two years with the cooperation of highway and traffic engineers . . . your assurance of satisfaction.

LOOK AT THESE OUTSTANDING FEATURES

Marked resistance to high humidity • Flow freely through dispensing equipment • Store for unlimited periods without agglomerating Contains no waxes, oils or silicones • Offer perfect adhesion to any suitable traffic bead binder Eliminates necessity of daily cleaning of hoppers for additional savings in time and labor

☆ ☆ ☆

Extra large Type "H" Safety Spheres—for Guard Rails—Curbs—Pavement Messages—Bridge Abutments, etc.

Send for free folder

FLEX-O-LITE

FLEX-O-LITE MANUFACTURING CORP.

8301 FLEX-O-LITE DRIVE

P. O. BOX 3066 (AFFTON BR.) • ST. LOUIS 23, MISSOURI

MAKERS OF DROP-ON, FREE-FLOWING, STANDARD, MILITARY, MOISTURE PROOF AND HIGH INDEX SIGN BEADS

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

For Better Insect Control

724 Your community's fly and mosquito control program will receive a boost when you use a TIFA insecticidal fog applicator. TIFA fogs large areas and permeates crevices to envelop and destroy insect pests on contact, and does so at low cost. For details, write PRODUCTS DIV., TODD SHIPYARDS CORP., COLUMBIA AND HALLECK STS., BROOKLYN 31, N. Y.

High Carrying Capacity Concrete Pressure Pipe

725 Municipal water departments using Lock Joint Concrete Pressure Pipe will find long life, permanent high carrying capacity and minimal maintenance to be standard, and to result in high quality service at low operational costs. For details, write LOCK JOINT PIPE CO., EAST ORANGE, N. J.

Adapts to All Phases of Sanitary Landfill Operation

726 What makes the International Drott 4-In-1 the efficient all-purpose sanitary landfill tool it is? A combination of factors—clamshell and carry-type scraper action, skid-shovel operation, bulldozer thrust—that permit spot-placing of bulky refuse, uniform spreading, the right degree of compaction and thorough, even covering. For details, write DROTT MFG. CORP., MILWAUKEE 15, WIS.

Small Trench Digger Is Big in Capacity

727 For a little unit—6,500 pounds, 3 feet 8 inches wide, 5 feet 8 inches working height—the Parsons 77 Trenchliner can do a lot of work. It digs up to 5 feet, produces up to 21 lineal feet of trench per minute and maximum trench widths of 18 inches. Compact and maneuverable, it can turn within its own length, and each crawler is independently driven, independently braked. Complete details are available from PARSONS CO., NEWTON, IA.

Heavy-Duty Traffic Striper Works Clean, Fast

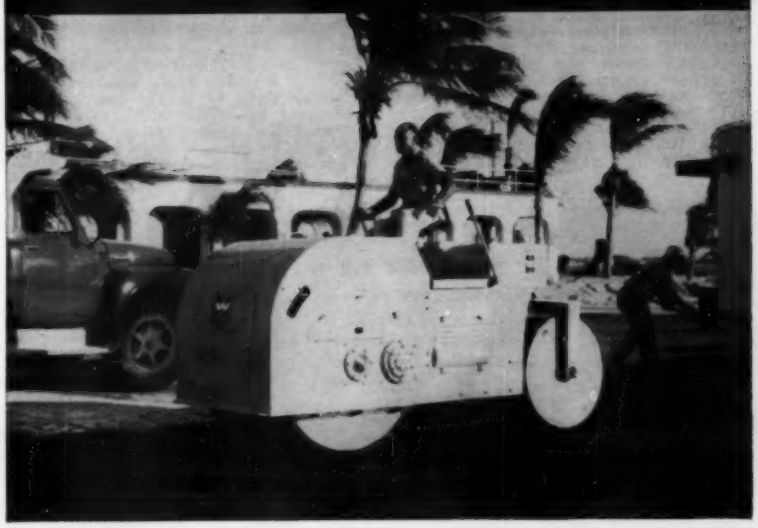
728 On straightaway or curve, on city streets, at airports or along county roads, the Mark-Rite Linemaster Model 9000 delivers 1, 2, or 3 clean lines solid or skip simultaneously. One-man operated and self-propelled, this traffic line marker works fast and will climb grades up to 20%. Paint capacity is from 10 to 60 gallons. For details, write UNIMASCO, INC., 424 W. REDONDO BEACH BLVD., GARDENA, CALIF.

New Roller Speeds Street Maintenance

729 Municipal street construction crews will appreciate the "hugging" quality of a new 5,450-pound (with water ballast) roller, just marketed by the GLEDHILL ROAD MACHINERY CO., GALION, OHIO. Designed to operate within one-half inch of buildings, telephone poles, and other high obstacles, this sturdy unit eliminates hand-tamping of pavement surfaces, a slow, costly, and inconvenient procedure. For additional information, write to the company.

(See page 60 for more Bulletins)

HUBER-WARCO
tandem rollers



new features added to 3-5 ton tandem

Two exclusive new features have been added to the Huber-Warco 3-5 ton TANDEM ROLLER . . . a tail-shaft governor and a new disc-type brake on the transmission output shaft. Other standard features include . . . a torque converter . . . water-cooled engine . . . spur gear final drive . . . dual controls . . . and adjustable tapered roller bearings on the kingpin and on both the guide and drive roll axles. The Huber-Warco 3-5 ton TANDEM ROLLER gives big tandem performance on jobs that defy the bulkiness of a big roller. In addition to the standard unit, the 3-5 ton TANDEM is also available with a towing attachment, or with a retractable wheel attachment. In the larger size tandems, a 5-8, 8-10, 8-12 and 10-14 ton unit is available. See your Huber-Warco distributor for complete details.

MOTOR GRADERS

TANDEM ROLLERS

3-WHEEL ROLLERS

MAINTAINER

Products of HUBER-WARCO COMPANY, Marion, Ohio, U. S. A.

HUBER-WARCO COMPANY, Marion, Ohio, U.S.A.
Send me specifications on the Huber-Warco
☐ 3-5 ton ☐ other tandem models
☐ Maintainer ☐ Motor Graders
☐ 3-Wheel Rollers

Name _____
Title _____
Company _____
Address _____
City _____ Zone ____ State _____

HUBER W WARCO

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

Emergency Alarm Signal System

730 Municipalities may now avail themselves of a specially engineered fire and public emergency reporting system that contains the reliability of a telegraph system plus the flexibility of a telephone system. Phonalarm can operate on any existing fire alarm telegraph system. For additional information, write PHONALARM, DIV. of ANGELUS INDUSTRIES, INC., BOX 500, 5353 STROHM AVE., N. HOLLYWOOD, CALIF.

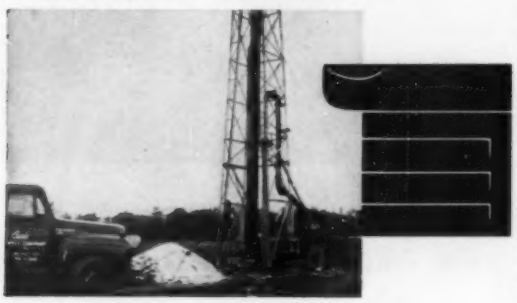
New Type of Venturi Tube

731 Higher differential pressure, lower head loss and shorter laying length are features of Infilco's new twin-throat venturi, ideal for metering of water and sewage. Description, graphs and technical information are contained in *Technical Data Bulletin No.* 1021, available from INFILCO INC., P.O. BOX 5033, TUCSON, ARIZ.

Stationary Asphalt Plants

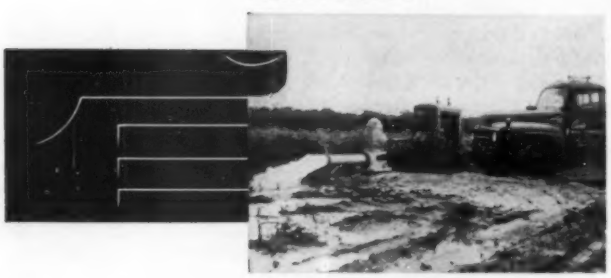
732 A new line of batch-type bituminous mixing plants—the Model H Series—is available in six sizes and able to produce from 45 to 240 tons per hour. Designed by IOWA MFG. CO., CEDAR RAPIDS, IA., these meet the output needs of small as well as large municipal producers of bituminous concrete

PICTURE OF A WISE WELL DRILLER 20 feet of 12" (#60) slot Red Brass Wire Wound Cook Well Strainer are lowered into a 120' Well drilled by Cart Well Co., Inc., Weiner, Ark.



PICTURE OF HIS REWARD

2000 gallons per minute for irrigating the cotton and soy bean farm of Billy Flippo near Turrell, Arkansas. The Cook strainer produced this water with less than 25 feet of drawdown.



Both Charlie Givens of the Cart Well people and Billy Flippo definitely agree on two things: irrigation and Cook Well Strainers. They know they can get the "long-pull" dependability from Cook that cheaper, inferior strainers can't guarantee.

You can get this kind of results by calling or writing Cook today. Wire-wound and tube-type strainers are available in slot sizes from .006 to .25" fabricated from Red Brass, American Everdur Bronze, Armco Iron or Stainless Steel. Eight to ten hours delivery often possible. Phone Cincinnati HU 1-8800.

COOK WELL STRAINER CO.

6330 Glenway • Cincinnati 11, Ohio

WORLD'S LEADING NAME IN WELL STRAINERS

Roller Compacts in a Single Action

733 Galion's 3-wheel roller with Jackson electric vibratory compactor so effectively provides both the static compressing action of massive roller weight and the consolidating action of vibration that municipal street construction crews often are able to meet specifications for rigid densities in one pass per lift. For details, ask THE GALION IRON WORKS & MFG. CO., GALION, OHIO, for *Bulletin* No. 423.

Automatic Off-Street Parking

734 Parcoa gives flexibility and positive control to municipal off-street parking operations. Low in first cost and operating around the clock without attendants, it offers a wide choice of controls—card keys, coins, tokens, or any combination. Where per hour rates apply and for merchant-participation parking, the time-dated ticket dispenser can be employed. For details, write PARCOA, DIV. OF JOHNSON FARE BOX CO., 4619 N. RAVENSWOOD AVE., CHICAGO 40, ILL.

Submergible Water Pump

735 Designed to supply from 20 to 76 gpm for a 4-inch ID casing, Reda's Model "D-52T" submergible pump can provide high water capacities from wells as deep as 300 feet. It is constructed of corrosion-resistant materials, with bronze impellers and ni-resist diffusers, and is available in 1, 2, 3 and 5-hp units. For additional information, write REDA PUMP CO., BARTLESVILLE, OKLA.; ask for *Bulletin* R-571.

Custom Mowing for Municipal "Green" Areas

736 State your mowing specifications—type of grass, size of area to be mowed—one of International Harvester's 66 tractor-mower combinations will meet them exactly. The right combination will help you custom-maintain your municipal "green" areas and still stay within your budget. For details, write INTERNATIONAL HARVESTER, CHICAGO 1, ILL.

Cures Traffic Bottlenecks

737 Traffic moves smoothly and in orderly fashion through Baltimore, Md. It can in your city, too—if you install an Electro-Matic PR System to automatically effect timing patterns to meet traffic conditions of the moment. *Bulletin E-224B* fully explains this modern, efficient signal system; for your copy, write AUTOMATIC SIGNAL DIV., EASTERN INDUSTRIES, INC., NORWALK, CONN.

Water Treatment Methods and Equipment

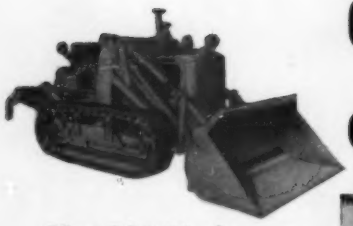
738 *Bulletin* 4433, just released and titled *Outline of Modern Water Treatment Equipment*, describes the fundamental methods of treating municipal, industrial and boiler-feed water and explains the new and basic equipment used in typical treatment systems. For your copy, write THE PERMUTIT CO., DEPT. AC, 50 W. 44th ST., NEW YORK 36, N. Y.

Agile Tractor Adapts to Many Jobs

739 Municipalities will find many uses for the Napco Crab, a powerful 4-wheel drive, 4-wheel steer tractor of high mobility and agility that won't be intimidated by difficult terrain, exacting work or heavy loads. With attachments, it can dig, load, sweep, haul, doze, grade, hoe, stockpile. For details, write NAPCO INDUSTRIES, INC., SEVENTH ST., NORTH LYNDALE, MINNEAPOLIS 11, MINN.

(See page 64 for more Bulletins)

"Our one OLIVER OC-126 Loader handles our complete sanitary landfill operation"



Oliver OC-126 loader

"It is the ideal machine for this operation. It digs the trenches, spreads and compacts the refuse, and covers—doing all these jobs just like it was made specially for this work. Its low operating and maintenance costs continually amaze us."

Calvin F. Ellis, Supt. of Public Works, Moorestown, New Jersey, directs a sanitary landfill that's so efficient public officials have come from a wide area to inspect it.

With just one Oliver OC-126 loader, they handle all functions of sanitary landfill for a population of 13,000 and numerous industries.

In your sanitary landfill, too, you'll benefit more from Oliver's high-clearance design with fully protected crawlers and rapid bucket action. It's the most capable loader in the 1½-yard size! See your Oliver distributor.

FREE! Newest Service Bulletin on Sanitary Landfill

The most up-to-date guide with helpful data, step-by-step pictures, complete explanation. Mail coupon.

THE OLIVER CORPORATION

Industrial Division, 19300 Euclid Ave., Cleveland 17, Ohio

a complete line of industrial wheel and crawler tractors and matched allied equipment

For effective pest control —the Oliver Mist Sprayer

You can have positive, low-cost control of bugs, flies, mosquitoes and Dutch elm disease. The Oliver Model 125 mist sprayer has a powerful, concentrated spray stream that permits spraying large areas faster, better and with more lasting results. Mail coupon.

USE THIS HANDY COUPON

The Oliver Corporation
19300 Euclid Ave., Cleveland 17, Ohio

Send me your new sanitary landfill bulletin.

_____ Also supply literature on the Oliver mist sprayer.

*Name*_____
(Please Print)

*Title*_____

*Address*_____

*Town*_____ *Zone*____ *State*_____

INTRODUCING.

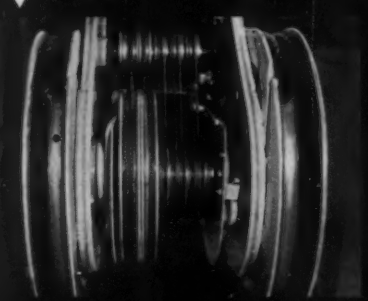
HOLAN Elbow

GENERAL DATA

Safe Load, All Positions . . . 600 lbs.
Comfortable Maximum Working Height . . . 42'
Reach . . . 31', 4"
Continuous Mast Rotation in Either Direction
Upper Arm Travel . . . 270°
Lower Arm Travel . . . 80° (standard)
120° (optional)

▲ Side view shows Elbow neatness and strength. Note that hydraulic lines extend only to the double-acting cylinders; no lines pass through the hinged joint between upper and lower arms. Rectangular lift arms—fabricated from high-tensile steel—are 20 percent lighter than conventional arms, yet 20 to 25 percent stronger.

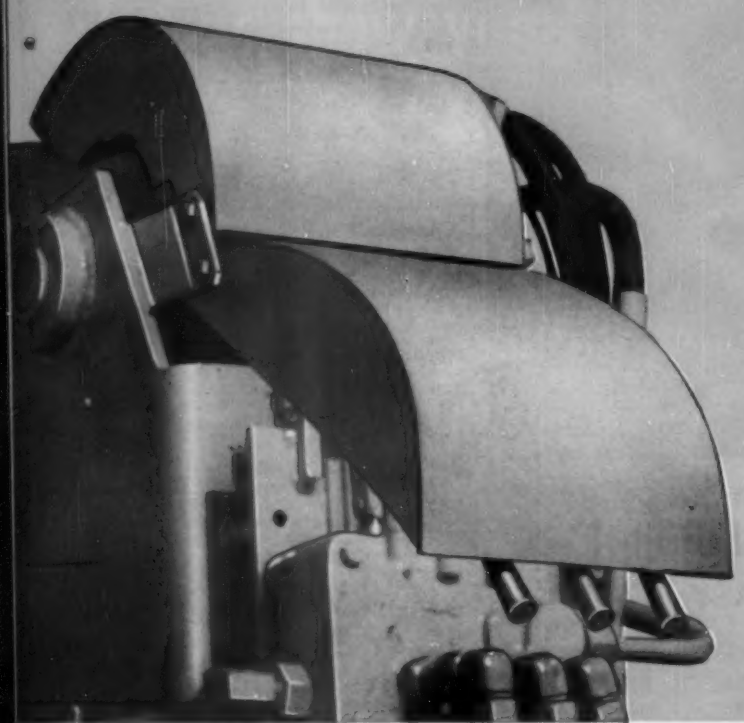
Inside look at the exclusive direct-acting, aircraft-type control system enclosed in the lift arms. Elbow is controlled by 3 levers on the right-hand bucket. Emergency controls are on mast. ▼



◀ Holan Elbow reaches over car in downtown Cleveland. Horizontal reach is 31', 4". Ground-to-floor height is 36', 10", providing comfortable working height of 42'. Elbow bends 8', 8" below ground level. Upper arm travels 270°, lower arm 80°. (Optional feature: lower arm travel of 120°). Mast rotates 360° continuously in either direction.

Two workmen glide high for tree trimming. Men work safely because special controls prevent truck movement until Elbow is resting in support brackets. ▶

.the first aerial elbow with cable-type control system



New Holan Elbow has aircraft-type cable controls for ease of operation and a minimum of maintenance

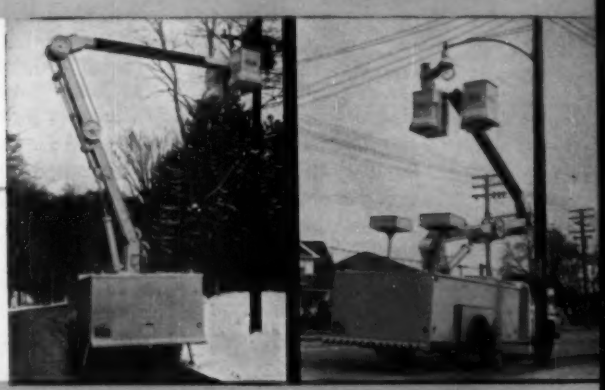
Three years in the development stage, the Holan Elbow is here — a double-armed, twin-bucket unit that reaches high and far with ease and safety.

It's easier to operate because of precise aircraft-type cable controls . . . easier to maintain because hydraulic lines extend only to the cylinders. This eliminates the usual 125 to 240 feet of hose and tubing — and eliminates oil leakage and the need for bleeding of lines. No special tools are ever required.

On these pages, you get a glimpse of the sound engineering and rugged construction that place the Holan Elbow in a class by itself. Look it over. Then, let us know when we can come out and tell you more . . . for instance, about how the Elbow is competitively priced.

J. H. HOLAN® CORPORATION
4100 WEST 150TH STREET
CLEVELAND 35, OHIO

OTHER PLANTS: HOLAN CORPORATION OF GEORGIA, Griffin, Ga.
J. H. HOLAN CORPORATION, PHOENIX DIV., Arizona
BRANTFORD-HOLAN LIMITED, Brantford, Ontario
THE NAME THAT MEANS WORK SIMPLIFICATION



Here, Holan Elbow speeds street light maintenance and construction work. Field uses include almost all overhead construction, inspection and maintenance. Twin work buckets—22" by 22" by 38" deep—are made of fiber-glass-reinforced plastic. Capacity: 600 lbs. Notice flare at bottom of buckets to provide more foot room.

Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

Microstraining for Water Treatment

740 A series of folders on test results and operating data illustrating the microstraining process is available from GLENFIELD & KENNEDY, INC., 706 NORTH AVE., NEW ROCHELLE, N. Y. Economic removal of microscopic debris and plankton render this method of automatic filtration invaluable in water treatment, pollution prevention, and water- re-use problems.

Upflow Clarification for Water Treatment Plants

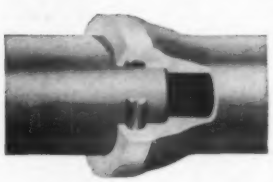
741 GENERAL FILTER CO., 923-925 SECOND ST., AMES, IA., has prepared a bulletin on upflow clarification. Called *"Contraflo" Upflow Cairifiers*, it gives description, drawing and tables on this water treatment process. Photographs of municipal installations are included.

How to Lay Concrete Pressure Pipe

742 For reference or on-the-job use, Price Brothers' revised edition of *Concrete Pressure Pipe Instructions*, will prove a valuable aid. The pocket-size manual clearly tells how to dig a trench and handle the pipe, gives easy steps in making the joint, and describes pipe bedding procedure. Technical data is boiled down to practical application. For your copy, write PRICE BROTHERS CO., 1932 E. MONUMENT AVE., DAYTON 1, OHIO.

McWANE TYTON JOINT*

CAST IRON PIPE *IS EASY TO LAY*



No bolts, no wrench, no lead pot or calking tools. The only joint accessory is a Tyton Gasket. You simply insert the gasket into the bell and then push two pipes together. Photo above shows use of a jack to force the plain end into the Tyton bell on sizes 10″ and larger. On sizes 8″ and smaller, the two pipe may be joined with a Fork Tool or a crowbar. Write for illustrated literature. *Patent Pending. Trademark ®

IMMEDIATE SHIPMENT 2″ & 2¼″ THRU 12″

McWANE CAST IRON PIPE COMPANY
GENERAL OFFICES & FOUNDRIES, BIRMINGHAM, ALA.
Sales Offices: Dallas Chicago Kansas City New York Birmingham

Microfilming Conquers Space

743 Paper work piling up? Record and report files encroaching on actual work space? Then it's time to follow the suit of Rochester, N. Y., Police Department—microfilm reports regularly. You'll save space (reportedly as much as 99%), speed reference and maintain accuracy. For other advantages, and to learn of the use other municipal government agencies make of microfilming, write RECORDAK CORP., DEPT. Y-5, 415 MADISON AVE., NEW YORK 17, N. Y.

These Chains Reduce Costs of Sewage Treatment Operation

744 Closed bearing construction and locked-in pins and cotters give Moline long pitch pintle chain extended service life and prevent the entrance of grit. Ideal for use in sewage treatment plants—for grit washers, sludge collectors, scum removers, settling tanks—this chain is available in special analysis metal with improved corrosion resistance. For details, write MOLINE MALLEABLE IRON CO., ST. CHARLES, ILL.

Better Sewer Lines at Less Cost

745 Sanitary sewer lines can be installed more quickly and operated more economically when Amvit Jointed Clay Pipe is used. Available in diameter sizes of 4 to 24 inches, these longer-length, stronger pipes make possible seven-way savings from house wall to treatment plant. And there is no sacrificing of performance quality. For details, write AMERICAN VITRIFIED PRODUCTS CO., NATIONAL CITY BANK BLDG., CLEVELAND, OHIO.

Concrete Pipe and Cribbing

746 From American-Marietta comes a related group of concrete products for use in building and rebuilding streets, roads and highways. Precast bridge superstructures, round pipe, flat base pipe, Lo-Hed and Hi-Hed and concrete cribbing for retaining walls are included. For complete information, write AMERICAN-MARIETTA CO., CONCRETE PRODUCTS DIV., 101 E. ONTARIO ST., CHICAGO 11, ILL.

Faster Street Paving

747 A versatile binder with an affinity for all aggregate—even damp, slick, and "hard to coat"—Cationic Bitumels permits a wider use of local, often lower-cost aggregate. It protects cold mix pavements and surface treatments against rain, and through faster set allows early rolling of coarse mixes and faster opening of pavements to traffic. For details, write AMERICAN BITUMELS & ASPHALT CO., 320 MARKET ST., SAN FRANCISCO 20, CALIF.

Accurate Water Intake Meters

748 You can depend upon accurate measurement when Sparling water works intake meters are on the job. Ideally suited for measuring large volumes through the discharge end of a submerged throat or conduit, these meters give efficient and economical service, and are easy to maintain. For additional information, write SPARLING METER CO., 239 N. TEMPLE CITY BLVD., EL MONTE, CALIF.

Easy-to-Maintain Tractor-Loader

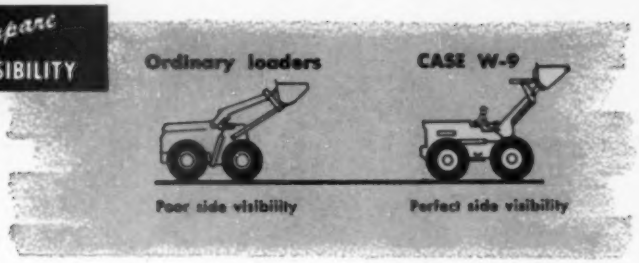
749 It takes a well-designed, ruggedly-built machine to stand up to the rigors of street construction and snow removal work and still give continuous dependable service at low maintenance. Tractor-Loaders can, and do in cities throughout the nation. For literature on these exceptional units, write TRACTOMOTIVE CORP., DEPT. AC., DEERFIELD, ILL.

(See page 66 for more Bulletins)

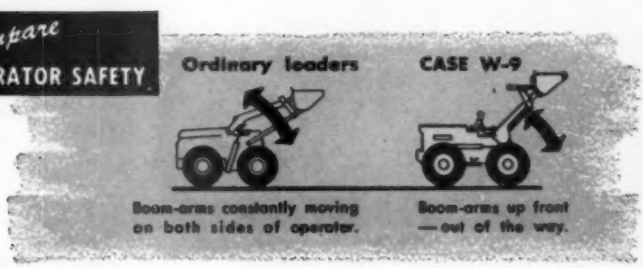
IT'S AN ECONOMIC FACT | Catalogs for You

Let us show you how the CASE® W-9 can cut your costs

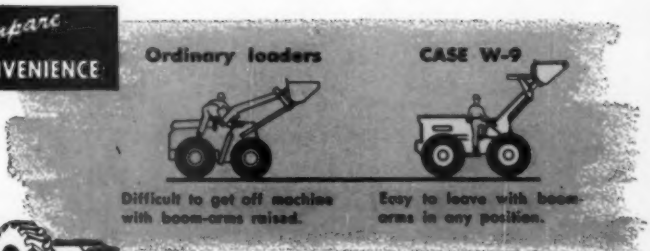
Compare VISIBILITY



Compare OPERATOR SAFETY



Compare CONVENIENCE



No matter what make of *4-wheel-drive* loaders you may own now — or are thinking of buying — it will pay you to *compare them side by side* with the new Case W-9 Terraload'r.

Field tests already have shown that this new Case-built, Case-powered loader can *dig more, carry more, dump faster — and with greater safety to the operator* — than competitive loaders costing as much as $1000 more. Best of all, the Case W-9 gives you a choice of 3 quick-change buckets — *1¼ cu. yd.* for heavy-duty digging, *1¾ cu. yd.* for standard materials; and *2¾ cu. yd.* for light materials — heaped capacities.

Remember, the *only* way to compare is to *see the W-9 in action* at your Case Industrial Dealer's — or mail coupon below for a free demonstration *on your own job.*

MAIL FOR FREE DEMONSTRATION

J. I. CASE CO., Dept. E1568
Racine, Wisconsin, U.S.A.

☐ I'd like to see a demonstration of the W-9 Terraload'r (no obligation, of course)

☐ Send free descriptive catalog

Name ..... Title.....

Company .....

Address .....

City ..... State.....

C-TL-170

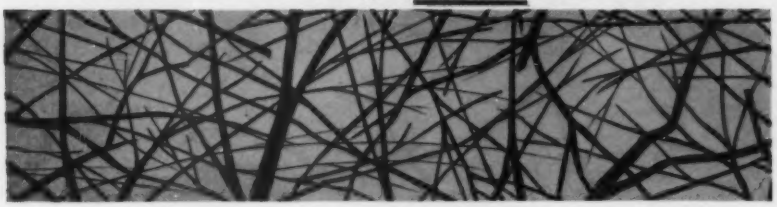
CASE
1st in quality for over 100 years

INDUSTRIAL WHEEL AND CRAWLER TRACTORS
LOADERS • DOZERS • BACKHOES • ENGINES

Non-Reflectorized Pavement Markings . . .

IT'S AN ECONOMIC FACT

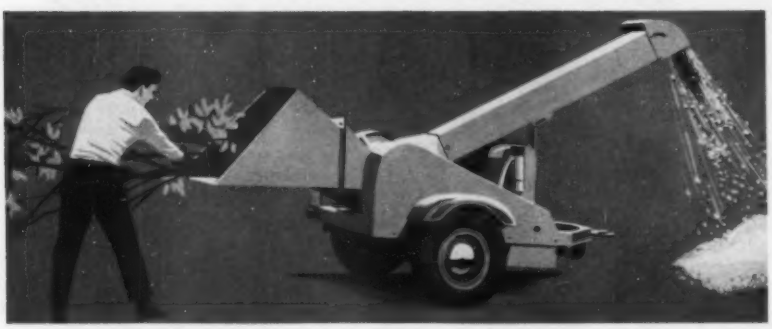
You can chip more brush



faster

at less cost

with an ASPLUNDH CHIPPER



than with any other machine on the market today!

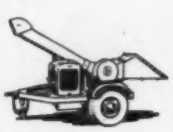
Asplundh Chippers can cut your hauling cost 75%, completely eliminate brush burning, and provide a useful, valuable by-product.

So ravenous is its appetite, so powerful its motor, and so fast its chipping action, it is equalled by no other. Yet it is so simple in design that maintenance is reduced to an absolute minimum.

Write *today* for full details. Better—ask for a prompt demonstration, without the slightest obligation.

ASPLUNDH CHIPPER COMPANY
505 York Road, Jenkintown, Pa.

By Actual Test the Fastest Chipper Made



Catalogs for You

Write directly to the manufacturers or use Post Card, page 54

Fiber Glass Traffic Signs, Free Sample

750 Are your criteria for traffic signs exacting? Do you insist upon superior visibility, permanent molded-in color, finish and legend? Light weight, toughness and durability? Easy installation and low maintenance? No painting and proof against rust and corrosion? Then you will want full information on Syloy fiber-glass reinforced plastic signs. Write to THE GENERAL TIRE & RUBBER CO., DEPT. 7, MARION, OHIO, and ask for your sample sign.

Municipal Overhead Maintenance

751 The Holan Elbow, first aerial elbow with a cable-type control system, will take the stretch out of municipal overhead maintenance, inspection, and construction work. A double-armed, twin-bucket unit that reaches high and far, it has been engineered for precision and safety. The elbow eliminates some of the construction inconveniences found in conventionally designed units. For details, write J. H. HOLAN CORP., 4100 W. 150th ST., CLEVELAND 35, OHIO.

Power Tools for Lawn Maintenance

752 The Booklet *Power* vs. *Drudgery* will convince park maintenance personnel of the benefits of tending lawns and seeding planted areas the power way. It fully describes Gravely power equipment for lawn and garden—tractor, tools, attachments—that permit maintenance of planted areas to be efficient, fast and economical. For details, write GRAVELY TRACTORS, INC., BOX 573. DUNBAR. W. VA.

Diatomite Filter for Municipal Water Supply

753 Need to increase the filter area at your municipal water plant, but your budget says, "No"? Want to add to present filter capacity to better handle peak loads, but don't care to construct new filter housing? Then ask the R. P. ADAMS CO., INC., 202 E. PARK DRIVE, BUFFALO 17, N. Y., for *Bulletin* 651; It will explain how the company's new IWF filter can help you solve these problems for your municipal water works.

Hangar Doors for Modern Airports

754 The challenge to find a new concept in hangar door design, necessitated by the larger hangars being built to accommodate the length and height requirements of jet transports, has been met. Response is in the form of motor-operated doors that slide horizontally on tracks giving access to full hangar length. For full information, write PEELLE CO., 47 STEWART AVE., BROOKLYN 37, N. Y. Inquire, too, about their Motorstair for terminal buildings.

Efficient Refuse Collection Saves Time, Lowers Costs

755 As long as it is trash or refuse, Pak-Mor refuse collection packer bodies will accept it. Size of rubbish doesn't matter, for these units have been provided with large, unlimited loading area that can accommodate really bulky objects with ease. This means that all refuse is picked up at every pick up stop. And direct compaction permits more pick ups at faster rates. For details, write PAK-MOR MFG. CO., LOOP 13 & ROOSEVELT AVE., P. O. BOX 6147, SAN ANTONIO, TEXAS.

for over 100 years

City ..... State.....

C-TL-170

Non-Reflectorized Pavement Markings . . .

HOW MANY LIVES WILL THEY COST TONIGHT?

The cost of reflectorizing pavement markings is extremely low . . . when you consider the lives that may be lost without it.

It is our firm belief that any stripe worth laying is worth reflectorizing. A great many traffic engineers hold this same view . . . and use Cataphote Reflective Traffic Beads to accomplish this purpose. Their records of reduced nighttime traffic fatalities . . . their records of longer marking life . . . prove it has been a wise investment.

If you'd like more information on Cataphote Reflective Traffic Beads . . . what you can do with them . . . what they can do for you . . . write today.

Cataphote
CORPORATION

TOLEDO 10, OHIO / JACKSON, MISSISSIPPI

Manufacturers of CATAPHOTE REFLECTIVE BEADS • CATAFLEX REFLECTIVE COATING • CATALINE REFLECTIVE STRIPING
CATATHERM REFLECTIVE PLASTIC STRIPING • TRAFFIC SIGNS • STREET NAME SIGNS

WATER DEPARTMENT, CHIEF ENGINEER

PLANNER OF OPERATIONS, JUDGE OF QUALITY

He says, "I recommend American Meters because of their advanced engineering, their simplicity and complete frost protection."

Men who have an engineering background appreciate the advanced design features of American Meters. They know that such features as the simplicity, the ruggedness, the thicker measuring disc, the transparent hard tenite plastic register cover, the "O" ring stuffing and packing, the ease of disassembly and assembly are the result of sound engineering knowledge and years of meter experience.

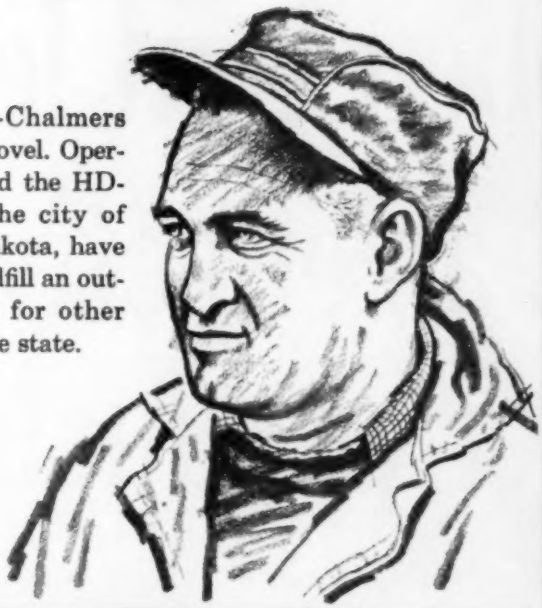
"Yes . . .", as Chief Engineer of the Water Department, "I recommend American Meters every time."

Use American Meters with sealed plastic register box for pit installation.

BUFFALO METER CO.

2902 Main Street • Buffalo 14, New York

He maintains a model landfill



. . . with an Allis-Chalmers HD-11G tractor shovel. Operator **Don King** and the HD-11G, owned by the city of Mitchell, South Dakota, have made the city's landfill an outstanding example for other municipalities in the state.

HD-11G 32,000 lb weight • 2¼-cu yd bucket • 111 net engine hp

Mitchell landfill features deep, clean disposal

Two things impress observers at this landfill . . . the clean, sanitary appearance and the efficient handling of garbage . . . more than 30 truckloads daily. The man most responsible is Don King who operates the Allis-Chalmers HD-11G on the dump. Don puts a blanket of cover material over new fill every night to keep it in place. The 11-G's 32,000 pounds help compact garbage—make it airtight and vermin-proof.

Operator King likes HD-11G advantages on his kind of work. Its slim cowl and low lines make it easy for him to see as he spreads, compacts and covers. A comfortable seat, clear platform and responsive controls also help make the HD-11G an operator's machine.

Besides keeping a model fill area, it is also used to load 10-ton trucks with sand for street and road work. Average loading time for each truck—only 1¾ minutes.

An Allis-Chalmers tractor shovel in your town can give you the same efficient service.

ALLIS-CHALMERS
CONSTRUCTION MACHINERY DIVISION
MILWAUKEE 1, WISCONSIN

Look ahead . . . *move ahead* . . . and stay ahead with **ALLIS-CHALMERS**

The more difficult your sewage odor or treatment problems the more startling and definite the proof...

"Cloroben is at least TWICE as effective as other products"

states authoritative Millburn, New Jersey report, appearing in April, 1958 issue of Public Works.

Well worth your attention is the complete Millburn history, typical of the reports sent us by professional sanitation engineers and sewage treatment plant operators.

Located along the Watchung Hills in Union County, Millburn is a fine suburban community. When vile sewage odors began to permeate the area in 1953, the residents demanded relief. During the summer of 1954 CLOROBEN was first introduced into the sewage collection system, and immediately stopped odor complaints. The CLOROBEN treatment was continued through 1954 and 1955 with excellent results. All odors were effectively controlled in lift stations, force mains and low gradient sewer lines.

Then, in 1956, various emulsifiable chlorinated benzenes were offered the township. Advertising claims indicated these products were almost identical to CLOROBEN. In price they compared favorably. So, in 1956 competitive bids were required, specifying CLOROBEN or equal. And, the contract was awarded to the lowest bidder.

Right after the change from CLOROBEN to the cheaper substitute, odor complaints began coming in. The amount of the chlorinated benzene used was doubled, then quadrupled. Everything else possible was done. Low gradient lines were flushed periodically, and lift station wet-wells cleaned weekly. But, the odor complaints persisted and increased. Sulphides and pH determinations were made throughout the system. Odorous areas invariably showed sulphides at 0.3 ppm or more, with pH below 7.5. The situation got even worse right up to July 31, 1957, when use of the cheap chlorobenzene substitute was stopped. On the following day CLOROBEN was reinstated.

Results were startling. By mid-afternoon sulphides had been reduced 50%, pH was back to 7.5. By evening sulphides in lift stations decreased by as much as 80%. And, no further odor complaints have been received since! Concrete and positive proof of the superiority of CLOROBEN in controlling odors and suppressing sulphide formations in sewage!

To effectively control odors and suppress sulphide formation, no product of its kind compares to CLOROBEN in safety, efficiency, and economy. And, only up-sewer treatment with CLOROBEN provides a non-septic, stabilized influent at the treatment plant for efficient operation.

Remember, CLOROBEN is an exclusive formula, the only chemical product of its kind. So, specify CLOROBEN. Not CLOROBEN or equal.

Because CLOROBEN has no equal.

Yours on Request: Authoritative Technical Bulletin, describing CLOROBEN applications in up-sewer treatment, sewage treatment plant, septic tanks, cesspools, chemical toilets, and industrial wastes. Write "CLOROBEN" on postcard or letterhead for your copy, sent you promptly without cost.

Write Dept. AC-5.

CLOROBEN CHEMICAL CORPORATION

115 Jacobus Avenue, South Kearny, New Jersey — Subsidiary of Standard Chlorine Chemical Co., Inc.

NOW

Only 60 seconds from sewer to truck

Sewer cleaning revolutionized with NEW TRUCK-LODER BUCKET MACHINE

- Bypass street dumping!
- Bucket Contents dumped automatically!
- Two-man Bucket Machine Crew!
- Easier to operate! Simple to maintain!
- Streets kept free of sewer deposits!

Sewer deposits dumped automatically ...DIRECTLY INTO TRUCK!

No more unsanitary sewer deposits on the street.

Releases man formerly needed for dumping bucket and shoveling into truck.

The Truck-Loder makes bucket machine operation a two-man job.

FLEXIBLE INC.

3700 DURANGO AVE., LOS ANGELES 34, CALIF.
1005 SPENCERVILLE RD, LIMA, OHIO
331 W. JEFFERSON BLVD., DALLAS, TEXAS

WORLD'S LARGEST MANUFACTURER OF SEWER CLEANING EQUIPMENT

Simplify performance budgeting with Burroughs Sensimatic Control-Input Equipment

New Burroughs Sensimatic Control-Input Equipment wraps up your performance budgeting and, as a by-product, automatically provides punched tape or punched card records for preparing:

- Expenditure Distribution
- Payroll Distribution
- Reports and Statistics
- Office Audit and Control
- Inventory Reports

Burroughs Sensimatic Control-Input Equipment gives you faster, simpler processing of your performance budgeting. And, as a by-product, prepares punched tape or punched card records for easy conversion to statistical reports and analysis.

With Sensimatic to Punched-Tape or Sensimatic Direct-to-Card Equipment you enjoy the Sensimatic's unchallenged speed and versatility. Its ease of operation. Its exclusive 4-jobs-in-1 control panel which makes all machine decisions and completes any job after simple indexing of amounts and a light touch on the motor bar by the operator.

The simultaneous punch feature (to tape or card) records all the data entered into the Sensimatic. These data can easily be converted into the reports and analysis so vital to any administration.

Demonstration? Call our nearest branch office. Or write: Burroughs Division, Burroughs Corporation, Detroit 32, Michigan.

Burroughs

Burroughs—T.M.

WISCONSIN cuts costs with HIGH DENSITY OVERLAID* plywood signs

State's 150,000 signs are maintained by 18 two-man crews; central sign shop is in Madison.

The Traffic Services Section of the State Highway Commission of Wisconsin has experimented with every type of sign material on the market. On the basis of tests and field experience, it is now using considerable amounts of high density overlaid plywood for reflectorized highway signs. The commission cites these three reasons why:

1. Lower cost—Department figures on completed reflectorized signs show high density overlaid plywood enjoys a marked advantage over metal. A 30" overlaid plywood STOP sign for example, costs $1.05 less than 0.081" aluminum.

2. Durability, appearance, vandal resistance—The overlay prevents checking or grain raise, extends useful life of sign. The unpainted sign back surface has a pleasing appearance, and the material seems less subject to vandalism than metal, especially by shooting.

3. Adaptability—Panels can be carried in stock in full sheets and cut to size as needed with inexpensive shop tools. Larger size plywood signs require fewer posts and framing members than comparable sheet metal signs.

OVERLAID FIR PLYWOOD* GIVES YOU THESE ADVANTAGES:

- Combines strength, rigidity and workability of plywood with smooth, durable fused resin-fiber surfaces.
- Great resistance to severe weathering . . . accidents . . . gunshot, bending, other acts of vandalism. No progressive deterioration after damage. Cannot rust or corrode.
- Perfect for long-lasting paint or silk screen finishes. Reflective sheeting may be applied direct to high density overlay, eliminating prime coat.

*OVERLAID PLYWOOD is top-quality DFPA quality-tested Exterior fir plywood (EXT-DFPA®). Two types: (1) High density overlay is hard, glossy; (2) Medium density is opaque, with texture like drawing paper.

DFPA TESTED QUALITY

OVERLAID*
Fir Plywood

MAIL COUPON FOR DETAILED INFORMATION

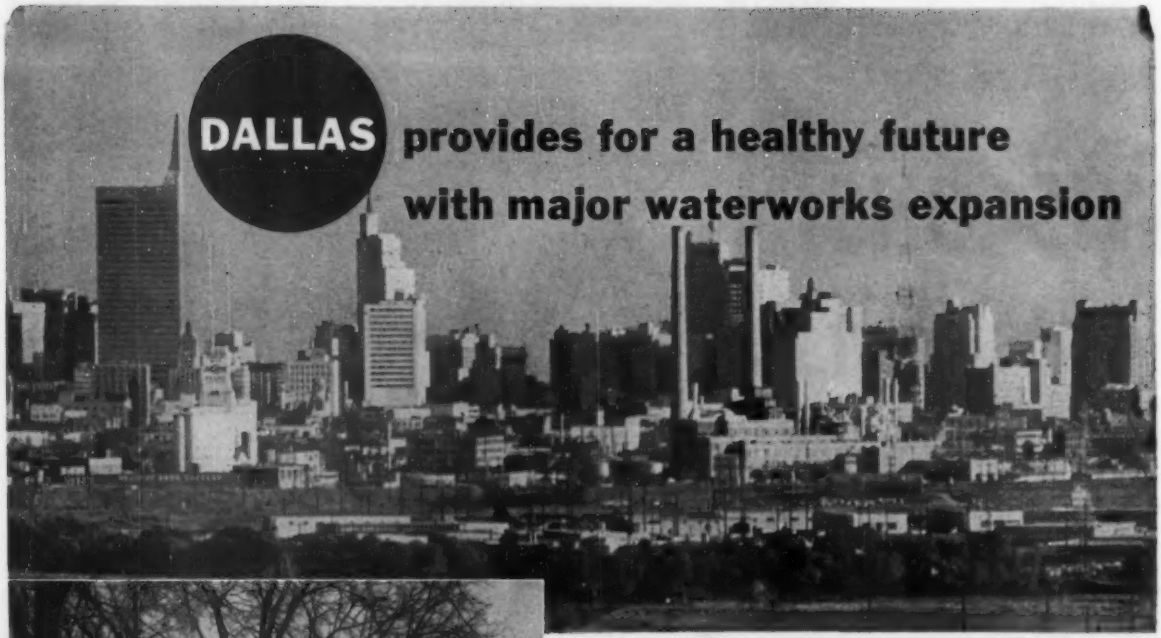
DOUGLAS FIR PLYWOOD ASSOCIATION
Tacoma 2, Washington, Dept. 160 (Good USA only)
Please send complete application-specification data for overlaid plywood for traffic signs.

Name_____

Firm or Dept._____

Address_____

City_____ Zone_____ State_____



Dallas, Texas, one of the fastest growing cities in the Southwest, is making sure that no water shortage will impede its progress.

Since 1946, Dallas has laid each year better than 100 miles of mains from 4″ to 72″ in diameter. This long-range program has enabled Dallas to provide for all present water needs, despite explosive population growth and a rise in water consumption from 44,000,000 gallons daily in 1946 to 86 million gallons today. It has likewise proved a fortunate factor in meeting the prolonged drought that hit the Southwest.

Today the progressive Dallas Water Department under the direction of its able superintendent, Mr. Henry J. Graeser, is taking a real long look into the future. It is making feasibility studies of new water sources that will continue to support the water needs of Dallas in the year 2000!

If your community expects to keep on growing, now is the time for long-range planning of water main extensions with —

Permanent

CAST IRON PIPE

This is the only pipe that has stood the test of time. Because of its century or more of useful life, its high capacity as a carrier and minimum maintenance cost, Cast Iron Pipe has rightly earned its reputation as: "America's No. 1 Tax Saver."

Our Company does not manufacture Cast Iron Pipe but has long supplied the nation's leading foundries with quality pig iron from which quality pipe is made.

WOODWARD IRON COMPANY

Since 1882

WOODWARD, ALABAMA

It's a fact ... the M-B Packer can give you full-capacity

PAINT PROBLEMS VANISH, TRAFFIC FLOWS FREELY WITH

OVERHEAD SIGN STRUCTURES OF ALCOA ALUMINUM

Eliminate maintenance and periodic traffic tie-ups. Specify Alcoa® Aluminum overhead sign structures that never need painting. They defy corrosion, save maintenance costs completely.

Sign structures of Alcoa Aluminum save money in other ways. Their lighter weight speeds installation, requires fewer men and less equipment. Hurricane winds of 100 mph cannot knock them down. Tubular truss designs, as well as single chord spans, engineered in Alcoa Aluminum provide high strength with big savings during installation.

Every modern highway requirement is met in highway products of Alcoa Aluminum. Significant savings are also possible with bridge railings, signs, lighting standards, gratings and chain link fencing. For detailed information, send for booklet on *Aluminum Traffic Control Devices*. Write Aluminum Company of America, 1680-E Alcoa Building, Pittsburgh 19, Pennsylvania.

ALWAYS FASTEN ALUMINUM WITH ALCOA ALUMINUM FASTENERS!

ALCOA ALUMINUM
Aluminum Company of America

Your Guide to the Best in Aluminum Value

"ALCOA THEATRE"
Exciting Adventure
Alternate Monday Evenings

what a payload! so firm... so big...

It's a fact . . . the M-B Packer can give you full-capacity loads like this from your routes. Think of the time and money saved over old-fashioned methods of refuse and garbage collection. ▪ See the fast, safe, clean "push-out" rear unloading action. The same powerful packer plate that compacts the material pushes out the load completely with one movement. There is no time-consuming, messy manual clean-out of the body . . . no danger of the unit tipping on uneven ground. ▪ Notice, also, the *thorough* compacting job done by the M-B Packer. Garbage, leaves, debris, even bulky cartons . . . compressed solidly right to the top of the body. That means more tonnage per load . . . fewer trips to the dump or incinerator. Routes are

finished faster and more blocks are covered each day. ▪ With M-B's foolproof, simple design, "downtime days" are practically eliminated and maintenance is fast and easy. There are no complicated, fussy hydraulic lines and valves . . . no intricate mechanisms to jam . . . just a powerful, top-to-bottom packer plate that squeezes the load to a solid, condensed mass like the one being dumped above.

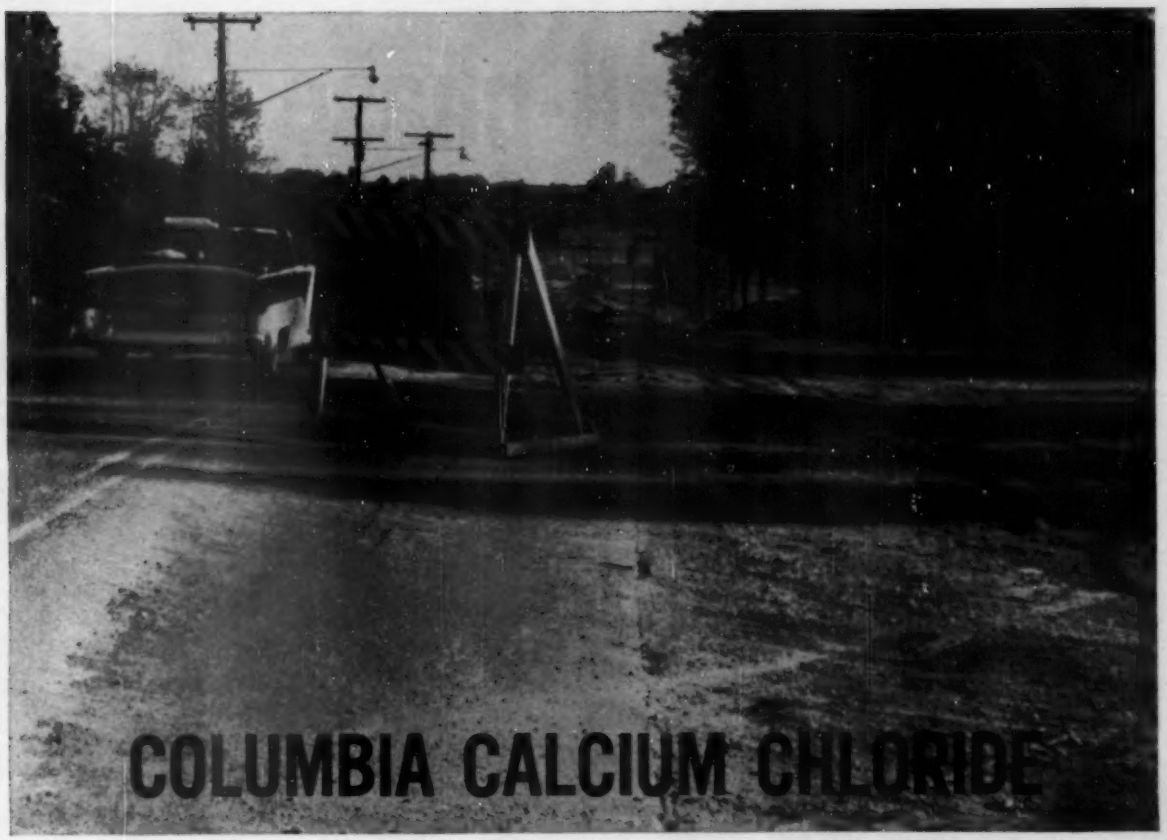
SWITCH TO THE M-B PACKER NOW!

Simple design ▪ Controlled packing ▪ Greater safety ▪ Fits less expensive trucks ▪ Costs less to buy — less to operate ▪ Packs anything ▪ Simplified mounting ▪ Less downtime ▪ No counterweights needed ▪ Loads and unloads faster ▪ 12, 14, 16, 20 and 24 cu. yd. capacities ▪ New 38 cu. yd. trail-pack and container-loader-packer-system now available. Call your distributor now for full information!

M-B Corporation, New Holstein, Wis.

M-B equipment for cleaner, safer living
8 Models of Line Markers to Fit Every Striping Job
Tractor-Mounted and Pull-Type Sweepers
Versatile Truck Loader with Powerful Jaw Action

M-B CORPORATION
NEW HOLSTEIN, WIS.
MANUFACTURERS OF QUALITY MUNICIPAL AND CONSTRUCTION EQUIPMENT *since* 1907



KEEPS DUST DOWN AND ROADS UP

Dust caused by traffic and by your construction and maintenance work creates public relations problems. Municipalities, nearby residents, and drivers don't like it. Your own crews don't like it. Efficiency goes down, and the chances of costly accidents increase.

Road and construction dust can be controlled very inexpensively with Columbia Calcium Chloride. This "thirsty" chemical absorbs moisture from the air to keep soil slightly damp. In addition to "sweetening" applications on road surfaces, you'll find it pays to spread Columbia Calcium Chloride through and immediately around working areas, in parking spots, and over detours and by-passes.

Heavier seasonal traffic means your attention will be on improving shoulders, too. Again, Columbia Calcium Chloride application produces solidly stabilized shoulders, safe for bearing of traffic and off-road parking.

When major reconstruction of roads or new road building is on your schedule, don't overlook applying Columbia Calcium Chloride to dense-graded aggregate bases. Effective stabilization is vital here.

You'll be using this versatile chemical product throughout the summer. Why not contact your nearest Columbia-Southern District Office now and arrange for quick delivery. For both product and service, specify Columbia-Southern.

Available in two forms—
High Test Flake (94-97% $CaCl_2$)
and Regular Flake (77-80% $CaCl_2$)

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

A Subsidiary of Pittsburgh Plate Glass Company

One Gateway Center, Pittsburgh 22, Pennsylvania DISTRICT OFFICES: Cincinnati, Charlotte, Chicago Cleveland, Boston, New York, St. Louis, Minneapolis, New Orleans, Dallas, Houston, Pittsburgh Philadelphia, San Francisco IN CANADA: Standard Chemical Limited

Exclusive all-phase sanitary landfill efficiency!

—for Burlington, No. Car. (Pop. 30,000)

Clamshell action enables picking up and spot-placing bulky refuse, without disturbing already compacted material. Even such hard-to-handle cast-offs as old tires or tree-stumps are easily handled with this 4-In-1 "clam" action.

"Carry-type scraper" action provides the exclusive, easily-controlled means of spreading "cover" evenly over the layered refuse—on the go. You simply regulate the amount of earth placed by controlling the clam lip opening.

Skid-Shovel action of the 4-In-1 lets you "iron down" the cover using the load-weighted bucket—plus hydraulic down-pressure of the compactor plate. This produces the positive compaction to eliminate rat-havens, "mosquito hatcheries," and stench pockets!

Your city can have up to double the efficiency of ordinary land-fill equipment—with an International Drott 4-In-1 or Bullclam. See how much extra utility, too, the 4-In-1 will give on street and park duties, and producing sand, gravel, or rock! Ask your International Drott Distributor for a 4-In-1 demonstration.

International Harvester Company, Chicago 1, Illinois
Drott Manufacturing Corp., Milwaukee 15, Wisconsin

INTERNATIONAL® DROTT®

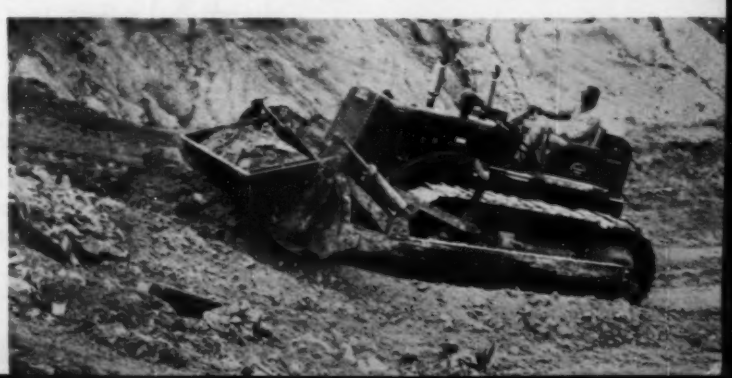
Versatility unlimited...all over town!

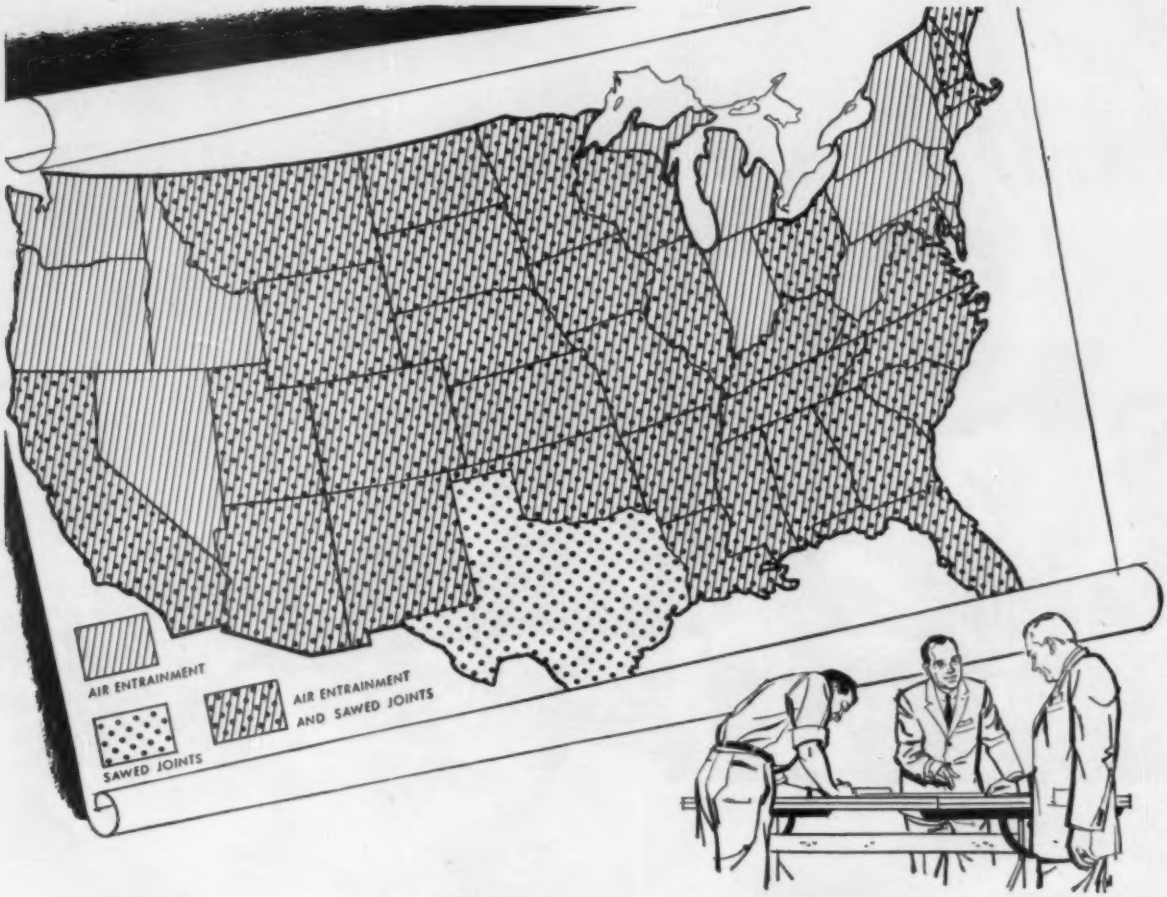
Part time on the sanitary fill—part time on streets, drives, parks, and playgrounds—that's the routine for many city-owned International Drott 4-In-1's. This TD-14 4-In-1 is removing old street surfacing materials. Other popular city jobs for 4-In-1's are loading sand and gravel, installing culverts and landscaping!

Bulldozer action permits spreading refuse in uniform layers—for easy compaction and thorough covering. With clam lip up and skid-shoes on the ground, the International Drott 4-In-1 is positioned for big-capacity refuse blading. These four TD-14 4-In-1 landfill scenes show how Burlington, North Carolina, handles refuse disposal for its 30,000 citizens. Daily collections total 400 cubic yards of packed rubbish and garbage.

"Our 4-In-1's versatility is adaptable to every phase of sanitary landfill operation, assuring fill compaction and coverage of refuse," states Richard F. Moore, Burlington's Supt. of Sanitation.

With up to twice the refuse-handling capacity of "single-action," limited-duty rigs, International Drott Bullclams provide amazing efficiency and economy. Bullclams are recommended for the larger cities needing the full-time service of a specialized, big-capacity refuse disposal machine. The TD-18 Bullclam shown is using compactor plate action to pack and seal refuse on a Fort Worth, Texas, landfill!





48 state highway departments list new-type concrete in their specifications

Nationwide, state highway departments now have specifications to cover one or more advances that make today's concrete new-type. More and more states *require* design features like air entrainment and sawed joints for *all* new concrete construction—pavement and structures.

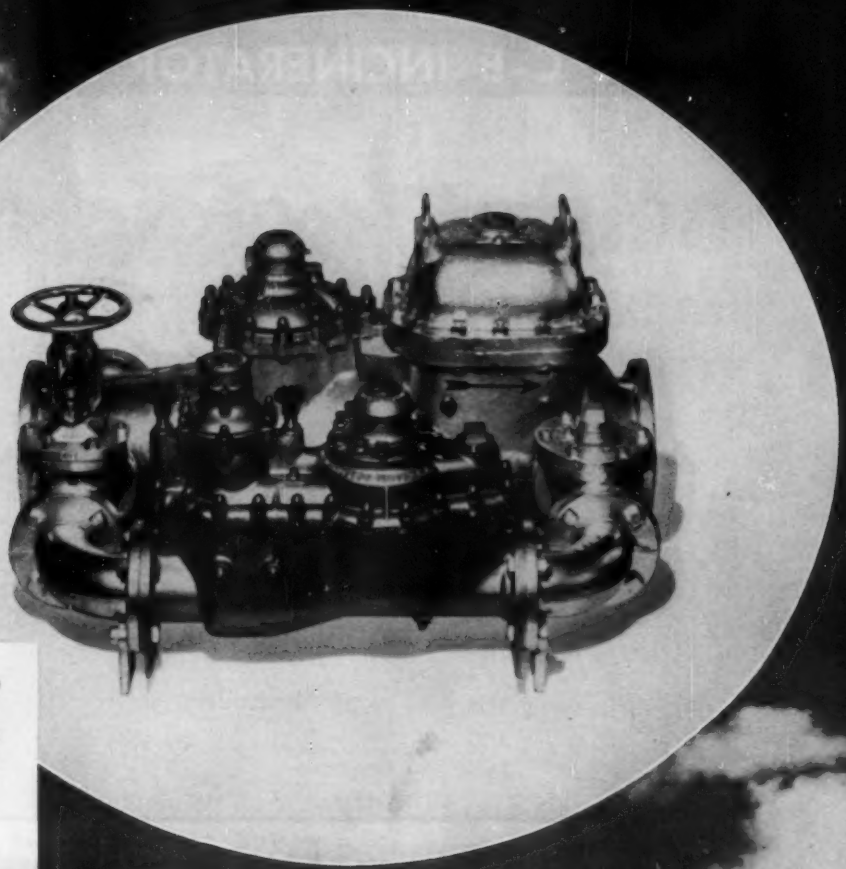
Through your work, you are keenly aware of these advances. You may have been active in their development.

But what about the *public?* The average driver doesn't yet realize or appreciate what these advances mean to him in terms of increased comfort and safety. And that's where PCA's new national advertising takes a hand . . . to help you tell this story of today's new, smoother-riding concrete to the people who drive your highways.

The support of an informed public can help speed the big highway job . . . especially in the planning and building of the Interstate System.

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete



Model FM-CT
Water Meter
Sizes 4"-10"
Inclusive

Nothing has yet been produced that equals the

HERSEY DETECTOR (Fire Service) **METER**

for measuring all rates of flow for Domestic-Industrial and Fire service lines.

Send for circular giving full details

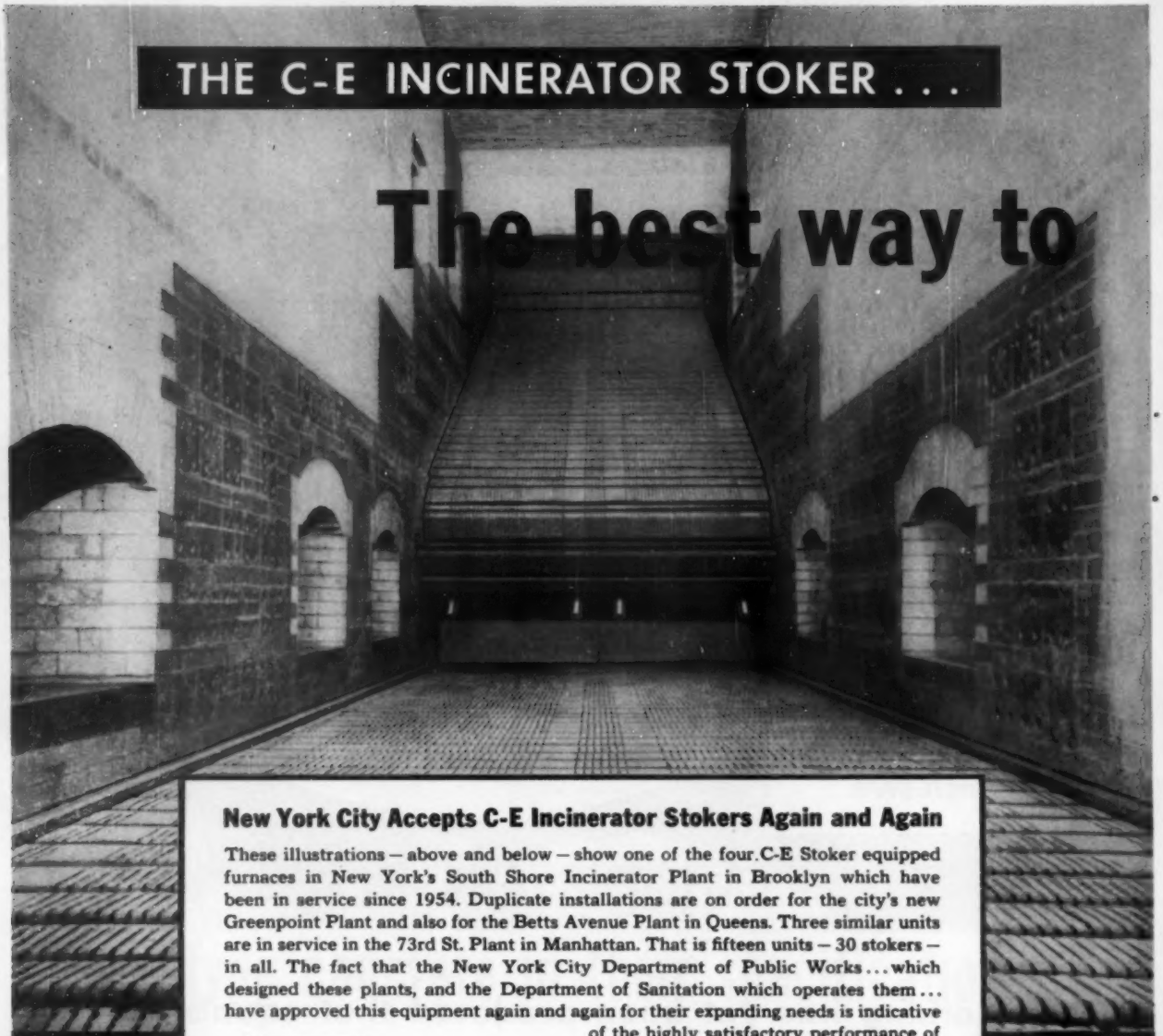
HERSEY MANUFACTURING COMPANY

DEDHAM, MASS.

BRANCH OFFICES: NEW YORK — PORTLAND, ORE. — PHILADELPHIA — ATLANTA — DALLAS — CHICAGO
SAN FRANCISCO — LOS ANGELES

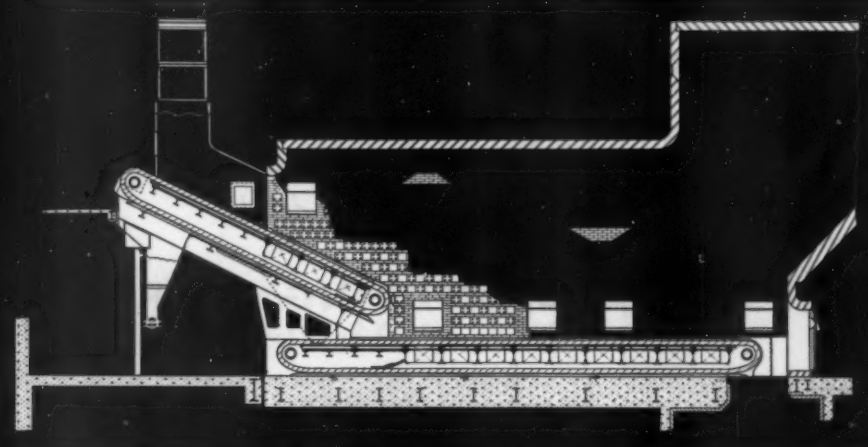
THE C-E INCINERATOR STOKER . . .

The best way to



New York City Accepts C-E Incinerator Stokers Again and Again

These illustrations – above and below – show one of the four C-E Stoker equipped furnaces in New York's South Shore Incinerator Plant in Brooklyn which have been in service since 1954. Duplicate installations are on order for the city's new Greenpoint Plant and also for the Betts Avenue Plant in Queens. Three similar units are in service in the 73rd St. Plant in Manhattan. That is fifteen units – 30 stokers – in all. The fact that the New York City Department of Public Works . . . which designed these plants, and the Department of Sanitation which operates them . . . have approved this equipment again and again for their expanding needs is indicative of the highly satisfactory performance of the initial South Shore installation.



burn municipal refuse

The C-E Incinerator Stoker has numerous points of superiority but the foremost of these is its perfect suitability to the "*continuous*" process of refuse incineration. There is a tremendous saving in the labor required for operation over that necessary for the widely used "*batch*" process.

From the time the refuse is deposited into the self-sealing, non-clogging, feed hopper until the incinerated residue is ready to be hauled away, only minimum operating attention is required. A comparison between a C-E equipped "continuous" process furnace and any contemporary "batch" process installation will prove a revelation to anyone concerned with the problems of refuse disposal.

The decontaminated refuse as it comes from the C-E Incinerator Stoker provides a sanitary inoffensive fill for reclamation of waste lands, swamps and other recoverable areas.

Where there is need for steam for heating, power or process, the addition of a waste heat boiler to utilize the heat produced by the incinerator provides an exceptionally desirable and economical arrangement. Auxiliary oil-firing equipment can be supplied to assure continuity of steam output irrespective of incinerator load.

The C-E Incinerator Stoker is designed to handle all types of combustible refuse in quantities ranging upward from 50 tons per 24-hour day.

For further information, please contact the Combustion office in your city or write directly to Combustion Engineering, Inc., 200 Madison Avenue, New York 16, N. Y.

INDUSTRIAL REFUSE

Get rid of *industrial refuse*, too, with the C-E Incinerator Stoker. Add a Waste Heat Boiler if additional steam is required.

New York City's South Shore Incinerator Plant where four furnaces equipped with C-E Incinerator Stokers have been in service for three years.

HIGHLIGHTS OF C-E DESIGN

- Large hopper and chute provide sealed, continuous supply of refuse.
- Unobstructed, non-clogging feed of refuse.
- Continuous, positive advance of fuel bed from front to rear.
- Zone control of air to fuel bed.
- Continuous discharge of residue from grate surface.
- Easy to operate—no heavy stoking or cleaning of fires.
- Chrome cast iron — most suitable material — used for grate surface.
- Wide keys over driving chains prevent fouling.
- Easily replaceable grate elements.
- Steel driving chains take all tension.
- Take-up mechanism easily accessible at front.
- Assures maximum availability.
- Provides most economical method of disposal.
- Applicable to largest incinerators.
- Requires less labor than any other burning method.

COMBUSTION ENGINEERING

Combustion Engineering Building, 200 Madison Avenue, New York 16, N. Y.

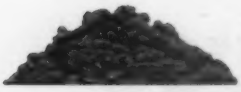
C-108A

ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT; NUCLEAR REACTORS; PAPER MILL EQUIPMENT; PULVERIZERS; FLASH DRYING SYSTEMS; PRESSURE VESSELS; SOIL PIPE

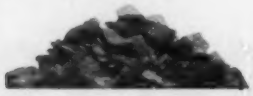
Name Your "Hard to Coat" Aggregate

CALIFORNIA
MARBLE CHIPS

OHIO
REFERENCE GRAVEL

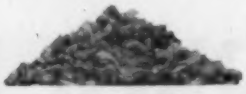


MARYLAND
REFERENCE GRAVEL



PENNSYLVANIA
REFERENCE STONE

MASSACHUSETTS
RHYOLITE



OREGON
CRYSTAL SILICA

NEW *CATIONIC* BITUMULS

- **Treats Most Aggregate... Especially "Treacherous" Types Such As Shown Here**
- **Protects Your Cold-Mix Pavements and Surface Treatments Against Early Rains**

CATIONIC Bitumuls,® our new, cold-applied asphalt emulsion, is a truly versatile binder with a "native" affinity for all aggregate, even damp, slick, "hard to coat" gravel and other hydrophilic stone. It also sets more rapidly than conventional road emulsions.

This combination of properties offers definite advantages to the Roadbuilder:

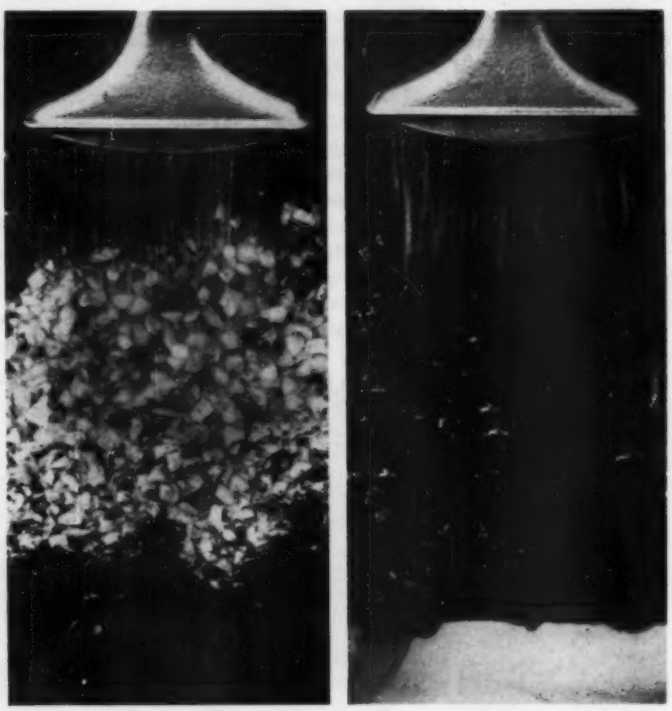
Wider selection in the use of local, often lower-cost, aggregates.

Extended working season . . . better protection against sudden showers.

Faster set permits early rolling of coarse aggregate mixes, and fast opening of pavement to traffic.

Storage, handling and application are much the same with **CATIONIC** Bitumuls as with conventional emulsions; however, care must be exercised in the preparation of storage facilities and application equipment.

CATIONIC Bitumuls is available from certain of our strategically located plants. Our engineers are ready to discuss projects which you may wish to set up for trials of this new product with specific types of aggregate.



Proof... the superior coating and holding properties of new **CATIONIC** Bitumuls are clearly demonstrated in this test. Note the almost-complete wash-out of the conventional road binder (left); while **CATIONIC** Bitumuls (right) firmly holds the crystal-silica chips used for these test mix samples.

American Bitumuls & Asphalt Company

320 Market, San Francisco 20, Calif. Perth Amboy, N. J.

Baltimore 3, Md. · St. Louis 17, Mo. · Cincinnati 38, Ohio
Mobile, Ala. · San Juan 23, P. R. · Tucson, Ariz.
Inglewood, Calif. · Oakland 1, Calif. · Portland 8, Ore.

SUBURBIA 1970?

For 1970's estimated 80,000,000 suburbanites, travel will be fast and convenient—without traffic strangulation—if planning for modern metropolitan transportation begins now in your community.

40,000 PEOPLE AN HOUR

The key to Suburbia 1970 will be COORDINATED METROPOLITAN TRANSPORTATION. New expressways will be needed. Modern rapid transit trains with exclusive rights-of-way will be needed to greatly increase expressway carrying capacity. (One lane of rapid transit will move 40,000 seated passengers an hour compared to the 2,000 people an hour that one expressway lane can carry.) Feeder buses will be needed, too, to connect less densely populated suburban areas with fast transit lines. Outlying parking areas at suburban transit stations will provide added rider convenience.

EVERYBODY BENEFITS

Everyone in Suburbia 1970 will benefit. Residents, merchants, businessmen, taxpayers . . . everyone who has a stake in continuing community growth and prosperity.

If you'd like more information about how you can support coordinated metropolitan transportation in your community, or to arrange for a showing of General Electric's new motion picture "Millions on the Move," write Section 107-60, General Electric Co., Schenectady, N. Y.

Progress Is Our Most Important Product

GENERAL ELECTRIC

BEST WAY TO SAVE MONEY IN A STREET SANITATION BUDGET...

BUY MOBIL SWEEPER®

SAVE MANPOWER — Fast, efficient 4-wheel Mobil Sweeper can sweep and transport the load direct to the dump, saving a pickup crew and truck. Equally efficient on central dumping systems, too.

REDUCES DEADHEADING — Traveling at top traffic or highway speeds, dependable Mobil Sweeper gets to and from the sweeping area in ⅓ the time required by other sweepers.

MAINTENANCE COSTS ARE LOWER — Sweeper mechanism is a rugged, simplified system engineered for heavy duty — all other parts are standard truck parts, readily available anywhere. Years of operation show Mobil Sweeper lowest in maintenance costs, more dependable on the job.

OUTSTANDING SWEEPING PERFORMANCE — Mobil Sweeper, with gutter broom next to the operator and full-floating pickup broom, maneuvers easily and sweeps better. Variable speed brooms can be adjusted to proper speed for sweeping light debris or heavily caked trash at the curb line.

SAFETY OF 4-WHEEL BRAKES IMPORTANT — Sweepers carrying heavy loads on busy thoroughfares must have the safety of 4-wheel hydraulic brakes, demand this important feature.

Learn The Whole Story of Mobil Sweeper's Money-Saving Efficiency —
Write for Bulletin AC-5 today. It's FREE.

CONVEYCO

MOBIL SWEEPER®

DIVISION OF THE CONVEYOR CO.
3260 E. SLAUSON AVE. • LOS ANGELES 58, CALIF.

DEMAND NATIONAL THANACIDE FOR ALL MUNICIPAL SPRAYING

NATIONAL THANACIDE KILLS ALL INSECTS

THANACIDE, used in the DYNA-FOG generator, positively kills all resistant as well as non-resistant insects.

THANACIDE should be used for the municipal control of houseflies, mosquitoes, roaches, and all other insects.

THANACIDE is recommended for city spraying and fogging in such areas as garbage heaps, city dumps, sewage disposal areas, livestock pens, and alleyways.

THANACIDE should be used around yards, houses, parks, and throughout the city.

THANACIDE kills those resistant insects that have built up an immunity to DDT, Chlorodane, and other chlorinated insecticides.

THANACIDE, mixed one gallon to 14 gallons of any petroleum solvent, produces 15 gallons of ready-to-use spray — reduces costs to a minimum.

For further information or a demonstration, write

national

DISINFECTANT COMPANY
2417 COMMERCE, DALLAS
906 S. SEVENTH, ST. LOUIS

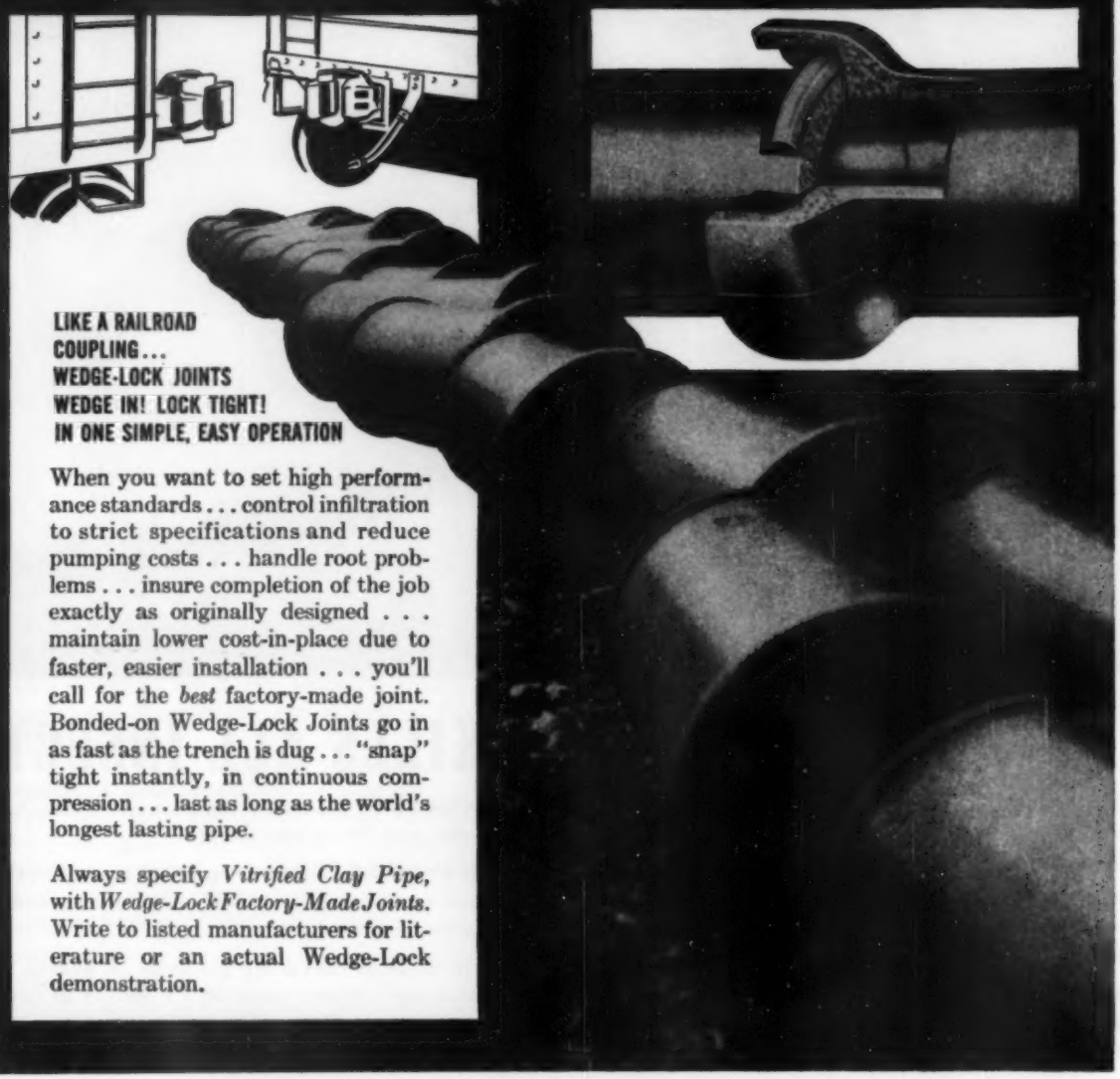
A PRODUCT OF NATIONAL RESEARCH

Write for details of our FREE Dyna-Fog loan program . . .

CASE HISTORY: How Badger PRP* helps communities

NEW **Wedge-Lock*** JOINTS

Greatest Contribution to Sanitary Engineering since Vitrified Clay Pipe



LIKE A RAILROAD COUPLING...
WEDGE-LOCK JOINTS WEDGE IN! LOCK TIGHT!
IN ONE SIMPLE, EASY OPERATION

When you want to set high performance standards . . . control infiltration to strict specifications and reduce pumping costs . . . handle root problems . . . insure completion of the job exactly as originally designed . . . maintain lower cost-in-place due to faster, easier installation . . . you'll call for the *best* factory-made joint. Bonded-on Wedge-Lock Joints go in as fast as the trench is dug . . . "snap" tight instantly, in continuous compression . . . last as long as the world's longest lasting pipe.

Always specify *Vitrified Clay Pipe*, with *Wedge-Lock Factory-Made Joints*. Write to listed manufacturers for literature or an actual Wedge-Lock demonstration.

Wedge-Lock CLAY PIPE

THE FACTORY-JOINTED CLAY PIPE AVAILABLE NATIONALLY FROM LOCAL MANUFACTURERS

Order Wedge-Lock from any of these Vitrified Clay Pipe Manufacturers:

Cannelton Sewer Pipe Company, Cannelton, Ind.
Clay City Pipe Company, Uhrichsville, Ohio
The Evans Pipe Company, Uhrichsville, O.
Gladding, McBean & Company, Los Angeles 54, Cal. *(Sold under trade name, "SPEED-SEAL")*
The Logan Clay Products Company, Logan, Ohio
Oconee Clay Products Company, Milledgeville, Ga.
Pacific Clay Products, Los Angeles 54, Calif.
Pine Hall Brick & Pipe Company, Winston-Salem, N.C.
Pomona Terra-Cotta Company, Greensboro, N.C.
The Robinson Clay Product Company, Akron 9, Ohio
The Stillwater Clay Products Company, Cleveland 16, Ohio

WLC-258-58

CASE HISTORY: How Badger PRP* helps communities meet rising costs without raising rates.

*

Planned Rehabilitation Program helps city

account for 94% of water used

through annual "roundup" of defective meters

A near impossible record — but this Midwestern city did it! The community (name on request) began metering when it started its water system back in 1882. One of the nation's first cities to be fully metered, it initiated a planned meter rehabilitation program at the outset. Result: low water waste, high water revenue — as much as 94% of *all* the water used is "accounted for."

Badger's Planned Rehabilitation Program has helped communities all over the country keep their water systems on this same profitable basis. They're installing new, accurate Badger meters where it is economically feasible... new essential parts where only minor repairs are needed.

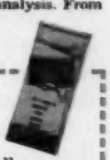
Is your water department paying its way?

If not, it's time your community held its own water meter roundup — to open the way to new revenue . . . end water waste from worn-out meters and parts . . . even help meet rising water department costs. Send for free booklet, "Take 5," outlining the 5 steps to increased revenue through Badger's Planned Rehabilitation Program.

And be sure to ask your Badger representative about our liberal water meter trade-in policy.

Research makes the big difference in meters Badger builds...

New features for water meters are constantly being developed and tested in Badger's engineering and research departments. Here a chemist inspects plastic specimens tested for dimensional stability. To his right, a test of registers operating under water determines corrosion resistance . . . and an electrolytic analyzer is making a quantitative analysis. From these tests and others will come still greater efficiency and proven durability for future water meters—first from Badger.



BADGER METER MFG. CO.
Dept. C-1, 4545 W. Brown Deer Rd.
Milwaukee 18, Wisconsin

Gentlemen:
Please send me your free booklet, "Take 5."

Name_____

Title_____

Address_____

City_____ State_____

Badger Water Meters

BADGER METER MFG. CO. • 4545 W. Brown Deer Rd.
Milwaukee 18, Wisconsin

SEEING IS BEHAVING!

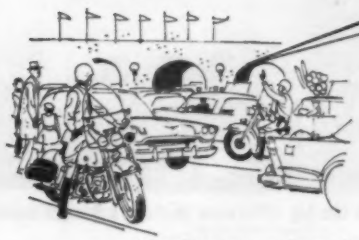
NEW TRANSISTOR RADIO

Cuts drain on battery when Solo is parked with radio on. Twin saddle bag has plenty of room for flashlight, first-aid kit, etc.

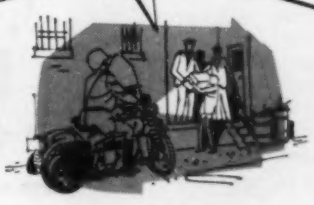
HARLEY-DAVIDSON
SOLO

PREVENTIVE MEDICINE

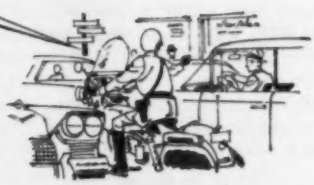
...that acts in **3** *important ways*



★ Patrolling and controlling traffic



★ Discouraging potential lawbreakers



★ Extending range of effectiveness

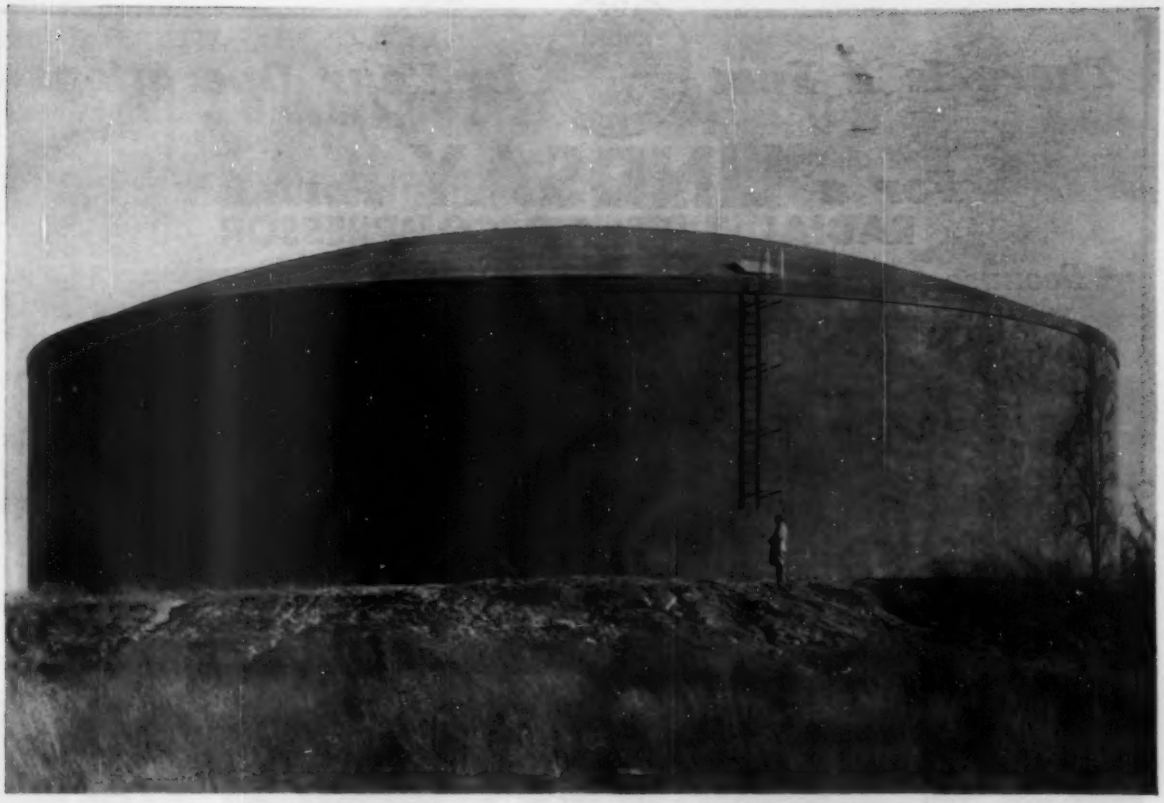
HARLEY-DAVIDSON SOLOS are potent symbols of law and order. The ability of an officer on a Solo *to see* and *be seen* prevents many traffic violations and accidents. It also discourages the would-be thief, thug or molester.

To this *preventive ability*, add the Solo's amazing *flexibility* and you have in your command a sure-cure for modern traffic problems . . . a vehicle that moves easily in congested areas, and at the same time possesses swift mobility to curb speeders and other law-breakers.

And with endless lines of automobiles streaming through on freeways and super highways, small communities, as well as large, are experiencing "big-town" traffic problems — problems that can best be solved by alert officers on Harley-Davidson Solos.

See your dealer or write HARLEY-DAVIDSON MOTOR CO., Milwaukee 1, Wis. for free illustrated literature.

HARLEY-DAVIDSON police motorcycles



This prestressed concrete water tank was constructed in Kettering, Ohio, by Preload Concrete Structures, Inc., Westbury, L. I., N. Y. The Parlon-based finish, "Moisture and Chemical Resisting Enamel," is made by the Lowe Brothers Co., Dayton, Ohio.

200 GALLONS OF PARLON-BASED PAINT PROTECT THIS 3,000,000-GALLON TANK

There are many reasons for the ever-increasing preference of paints based on Hercules Parlon® chlorinated rubber. Wherever protective coatings must meet a challenge from the weather or the corrosive effects of chemicals, Parlon-based paints are providing longer service at lower long-term cost.

For this water tank in Kettering, Ohio, the coating selected had to meet two main tests—it had to be attractive and it had to require little maintenance. Parlon passed on both counts. Only 200 gallons in a single coat were needed to provide the tank with an attractive green coating. Fifteen months later the paint job retains its "just like new" look.

Perhaps the many unusual properties available in Parlon-based coatings can solve your own maintenance problems. Your local paint supplier can provide additional information, or write direct to Hercules.

Cellulose Products Department

HERCULES POWDER COMPANY

INCORPORATED

900 Market Street, Wilmington 99, Delaware

C998-2

There Is A Spot LINDSAY PORTABLE Give Em Air! REG U.S. PAT OFF AIR COMPRESSOR *In Your Operations*

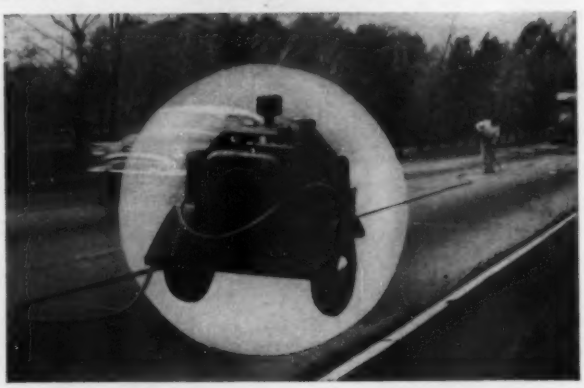
For a LINDSAY *Portable*
RADIAL TYPE AIR COMPRESSOR

Because . . .

★ They are truly portable
★ Light in weight
★ Low in original cost
★ Low in operating costs

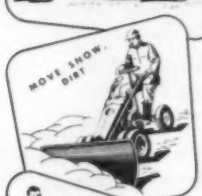
The one unit, direct drive design of Lindsay Compressors results in the construction of rugged, compact machines easy to operate and maintain. They may be moved by one man or towed at regular automobile speeds.

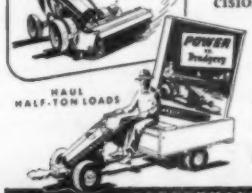
LINDSAY BUILDS RADIAL TYPE AIR COMPRESSORS from 55 c.f.m. to 125 c.f.m.
Smaller Models from 5 to 30 c.f.m.



A Lindsay Model 125 furnishes all the air needed to repair expansion joints on the 100 mile long Wilbur Cross Highway in Connecticut.

P. K. LINDSAY CO., INC.
Deerfield, New Hampshire
Everett 49, Mass.





Complete, year-round grounds maintenance costs can be cut to the bone with Gravely.

The precise control, amazing ease of operation and riding comfort of the Steering Sulky with 75"-cut Gang Mowers make large-area mowing quick and easy. Now, new Lawn Sweeper and Aerator also available. 3 models, 3 ground speeds available.

In all, the powerful Gravely offers 30 sturdy, performance-proved tools that solve every 12-month maintenance job—FASTER! BETTER! EASIER! . . . All-gear Drive, Power Reverse, Precision Control, Push-Button Starter.

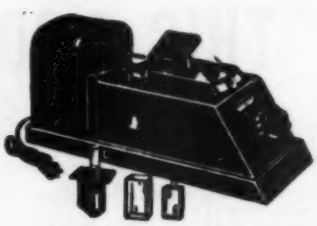
Free "Power vs. Drudgery" Booklet tells you all about America's most efficient, most versatile small tractor. Write for it *Today!*

GRAVELY TRACTORS, INC.
BOX 573 DUNBAR, W. VA.

PERFORMANCE-PROVED SINCE 1922

KLETT SUMMERSON
ELECTRIC PHOTOMETER

Adaptable for Use in Water Analysis



Can be used for any determination in which color or turbidity can be developed in proportion to substance to be determined.

KLETT MANUFACTURING CO.
179 East 87th Street New York, N. Y.

Blaw-Knox Universal Forms average ten years' service, give contractor competitive edge

The Jackson Construction Company, general concrete contractors of Gadsden, Alabama are engaged in installing curbs and gutters along 61 miles of streets in Mobile. Basic to this operation is the use of Blaw-Knox Universal Forms which have been standard equipment with Jackson for almost the entire life of their business.

Looking back on his company's experience, Mr. R. N. Jackson, President, says, "There are several features which a contractor should look for in curb and gutter forms. They should be sturdy enough to take the rough treatment that laborers will give them. At the same time they should be light enough to transport in a pickup truck. And most important, they should be easy to set and strip."

Any way you look at it, Blaw-Knox Universal Forms are a good, sound investment in your future profits. They are the only standardized, interchangeable, steel form system available for so many different jobs. See your nearest Blaw-Knox distributor. He's an expert in helping you fill your special requirement.

More than 1500 driveway openings had to be formed and poured on the Mobile, Alabama job. Salvaged sections of damaged forms were cut to length and used for this part of the job. A new Blaw-Knox Model 55 Trukmixer is delivering concrete to the job.

BLAW-KNOX

BLAW-KNOX COMPANY

Construction Equipment Division

30 Charleston Avenue, Mattoon, Illinois

ELIMINATE ALGAE THE modern WAY IN

LAKES, PONDS, RESERVOIRS & POOLS

Harmless to fish . . . effective from four to eight weeks . . . Berkite destroys microscopic algae spores in approximately ten seconds! Equally efficient where algae is already visible on surface!

In lakes, ponds, reservoirs, one gallon of Berkite No. 13 to every million gallons of water will eliminate the thickest algae growths with no harmful effects on humans, fish, birds, or wildlife. For outdoor pools, one quart of Berkite No. 4 to 50,000 gallons of water does a maximum job and is completely tasteless, odorless! Actually costs less, too. Both Berkite products are guaranteed by Modern—for over two decades the leading name in pool supplies and equipment.

Berkite No. 4 for outdoor pools; Berkite No. 13 for lakes, ponds and reservoirs.

FREE CATALOG! Send for your free copy of Modern's new 52-page catalog and Data Book. Includes prices, descriptions, photos, facts on pool care. Call your nearest Modern distributor or write for his name and catalog No. 12R

modern SWIMMING POOL CO., INC.
1 Holland Avenue, White Plains, New York

WORTHINGTON-GAMON

LIQUID METERS

All Sizes All Types

GAMON METER DIVISION

Worthington Corp.

296 South Street Newark 5, New Jersey

THE J. M. CLEMINSHAW CO.

— APPRAISERS —

Founded 1923

1601 Brookpark Road Cleveland 9, Ohio

SPECIALIZING IN THE REVALUATION OF MUNICIPALITIES AND RURAL PROPERTY FOR LOCAL TAX EQUALIZATION PURPOSES

Brochure & Client List Sent on Request

— BRANCH OFFICES —

Plainville, Conn., 11 Williams Street

Milwaukee, Wis., 2014 Sunset Court

Madison, New Jersey, 228 Brooklake Road

Des Moines, Iowa, 1129 46th Street

ALL MUSCLE! NO FUSS!

MEET THE JOHNSON SEA-HORSE V-50... WORLD'S FIRST OUTBOARD V-ENGINE

The biggest loads go quietly before "V" Sea-Horse force. And with good reason. You just open the throttle . . . VOOM. Blazing full thrust is instantaneous. And this first sea-going "V" can take it as well as dish it out!

The V-50 develops its full fifty horsepower without strain, at an engine-saving 4000 rpm. And its huge 70.7 cubic inch displacement lets it loaf on all but the heaviest jobs. What's more, this new kind of Sea-Horse is as efficient as it is effortless, so fuel consumption is surprisingly low.

This same "V" value is all through the 1958 Johnson line. From 3 to 50 hp, from $160 to $840, all eleven new Sea-Horses are models of dependability—worth more from take out to trade in. Why don't you go silent partners with a Sea-Horse. Your Johnson dealer's listed under "Outboard Motors" in the Yellow Pages. See him soon. Nearly two million dependable Sea-Horses prove *Johnson knows best.*

FREE 1958 Sea-Horse Catalog! Write: Johnson Motors, 439 Pershing Road, Waukegan, Illinois. (Division of Outboard Marine Corporation. In Canada: manufactured by Johnson Motors, Peterborough, Ontario.)

NEW 4-CYLINDER SEA-HORSE V-50.....$740

- Whopping 70.7 cubic inch displacement — largest among popular outboards.
- Develops 50 hp at only 4000 rpm — has enormous capacity for load.
- New recirculating water cooling system — maintains ideal block temperature, lengthens engine life. New V-50 can run continuously in the coldest waters.
- New twin-barrel down draft single carburetor — only one high speed carburetor adjustment to make.

Prices f.o.b. factory, subject to change. OBC certified brake hp at 4000 rpm (18s and 35s at 4500).

First in dependability... pioneers of the "V" age engine

Johnson

a PAYLOADER® does them all!

Only a PAYLOADER® can do them all!

The rubber-tire tractor-shovel has won its wide popularity through exceptional versatility and flexibility. This natural usefulness and work-ability is being broadened by the development of new, quickly-interchangeable attachments.

Because "PAYLOADER" is the pioneer and leading line of rubber-tire tractor-shovels you can rightly expect that tested and proven attachments will first be available on the "PAYLOADER" line.

Two of the newest of these attachments, exclusive on "PAYLOADER", are the Ram Black-top Spreader and the Superior Side-boom — both practical and field-tested. Superiority in design, in proven features, in attachments and in Distributor service — all these make "PAYLOADER" the best investment in tractor-shovels for contractor, public body and material producer.

FREE BOOKLET

Shows action views and details of the many interchangeable attachments (including exclusive new ones) available for all sizes of 4-wheel-drive "PAYLOADER" tractor-shovels.

THE FRANK G. HOUGH CO.
710 Sunnyside Ave., Libertyville, Ill.

Send "PAYLOADER" 4-wheel-drive information as follows:

- ☐ Free *attachment* booklet
- ☐ Hough purchase and lease plans.
- ☐ model HO (9,000 lb. carry cap.)
- ☐ model HH (7,000 lb. carry cap.)
- ☐ model HU (5,000 lb. carry cap.)

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Company _____

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City _____ State _____

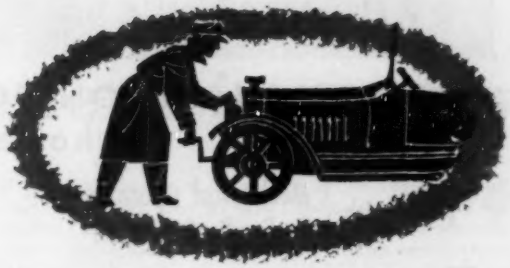
5-8-1

SAY "HUFF"

Modern Materials Handling Equipment
THE FRANK G. HOUGH CO.
LIBERTYVILLE, ILLINOIS
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

BAUGHMAN SAND and CINDER SPREADER

Cranking BY HAND is old fashioned



There was a time when hand-cranks were used for many things . . . to start an automobile . . . to run the washing machine . . . to pump water and to wind the clock. Maybe they were the "good old days" but they are past and the hand-crank is now an antique curiosity.

Today's modern designs call for automatic operation. This is true wherever you look . . . and it applies to parking meters, too.

EXPIRED
COIN
only the modern PARK-O-METER gives you all these advantages
1 Completely automatic, simple, one-hand operation.
2 No exposed working parts to be affected by weather or to tempt vandalism.
3 Adjustability for Split-rate as well as conventional rate settings and for any coin combination and time limit from 6 minutes to 72 hours.
4 Adjustment to change time, coin and rate combinations can be made without shop overhaul.
5 Accepts Pennies, Nickels, Dimes, Quarters or Tokens, any one or more, or all five through a single coin slot.

Allis-Chalmers

BAUGHMAN SAND and CINDER SPREADER

SAFETY CHAMPION FOR STREETS AND HIGHWAYS
choice of 4 drives

PTO with { Mechanical Operation / Hydraulic Operation

Auxiliary Engine with { Mechanical Operation / Hydraulic Operation

CAB CONTROLLED VACUUM CLUTCH PERMITS SPOT SPREADING (on mechanical operation)

Completely sealed, vacuum operation, controlled from cab. Start or stop spread in motion, as at intersections, safety zones. On hydraulic operation models, spot spreading is controlled by by-pass valve.

TWO-SPEED "QUICK CHANGE" MECHANISM

Simple sprocket and chain drive: low for chemical spreading, high for large-volume spreading. No need for expensive automotive transmission. On hydraulic opetation models, spreading volume is valve controlled.

MODEL K5-SC

WRITE FOR NEW ICE CONTROL CATALOG!

BAUGHMAN MANUFACTURING COMPANY

142 SHIPMAN ROAD • JERSEYVILLE, ILL.

CUT LABOR COSTS

with BUCKNER Quick-Coupling VALVES

Labor costs reduced to a minimum. Easy to handle. Self-closing, grit-proof, Quick-Coupling valves provide fast turf watering with hose or sprinkler. Out of sight for beauty and mower protection.

TURF KING SPRINKLERS

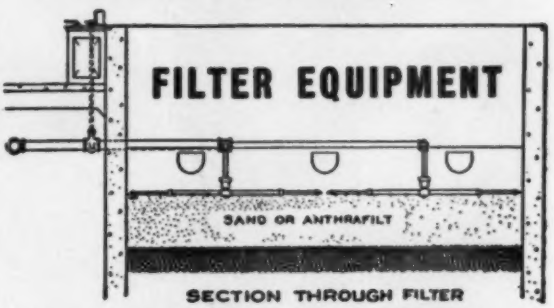
Positive low cost penetration. Turf King sprinklers provide maximum efficient coverage over large turf areas. Dependable rotation. Bearings are sand-proof.

BUCKNER MANUFACTURING CO., INC.

1615 Blackstone Ave. P. O. Box 232 Fresno 8, Calif.

PALMER

FILTER EQUIPMENT



SECTION THROUGH FILTER

Filter Bed Agitator Advantages

- Requires an average of 40% less wash water
- Eliminates mud balls
- Prevents cracking and shrinking of the beds
- Produces "new" sand after short period of normal operation
- Enables you to increase filter runs up to 50%

Anthrafilt Advantages

- Doubles the length of filter runs attainable with sand and quartz media
- Requires one-half as much wash water
- Filters are out of service less because of the shorter wash cycle
- Coating, caking or balling with mud, lime, iron or manganese reduced to the minimum

Write for Circular

PALMER FILTER EQUIPMENT CO.

P. O. BOX 1655, ERIE, PA.

Allis-Chalmers SURE-POWER generating sets

RIGHT for any city need

Whatever your continuous or stand-by power requirements, there is an Allis-Chalmers Sure-Power industrial generating set that is right for your needs.

Right Size and Fuel—5 to 300-kw capacities . . . gasoline, natural or LP gas, or diesel fuel . . . 50 or 60-cycle and range of voltages to match your needs.

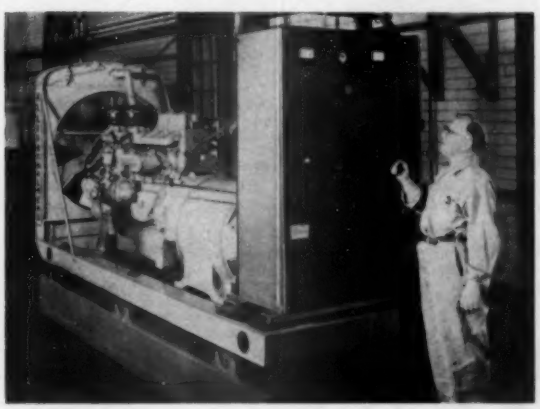
Right Performance—Every Allis-Chalmers engine generating set is backed by the company's outstanding reputation in the engine and electrical fields. Each is a compact unit mounted on a rugged, welded steel base.

Right Service — includes consultation on your requirements, practical equipment recommendations, economical installation and operational service as required. See your Allis-Chalmers engine dealer or write for detailed information.

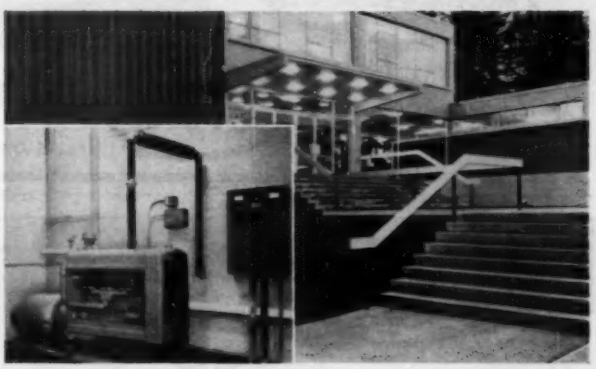
ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN

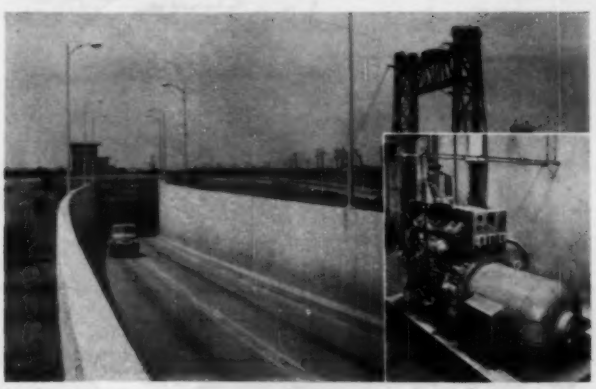
MUNICIPAL BUILDING — Officials of Burnaby, British Columbia, had an Allis-Chalmers 25-kw diesel generating set installed in Municipal Hall. This assures that vital electricity will be provided in this headquarters building during any emergency.

UTILITY — To insure continuous, efficient operation of their gas plants, Milwaukee Gas Light Co. has installed Allis-Chalmers 125-kw diesel engine generating sets. These protect against unexpected power outages and assure an uninterrupted gas supply.



SEWAGE PLANT — Modern 2½-million-gallon disposal plant at Coral Gables, Florida, uses an Allis-Chalmers 100-kw set for stand-by power. The set can generate electricity 15 seconds after a power failure to help aerate sewage tanks and protect health of the city.





VEHICLE TUNNEL — Poisonous gas could be dangerous to motorists trapped in this tunnel at Harvey, Louisiana, during an unexpected traffic jam. An Allis-Chalmers 100-kw generating set provides stand-by power for ventilating fans—and for pumps to remove storm water.

ALLIS-CHALMERS

BG-23

ANOTHER LOCKE SUCCESS STORY...

TOWN OF MILFORD, CONNECTICUT:

FOUNDED: 1639 **CITY AREA: 25 sq. miles**
POPULATION: 38,000 **PARK AREA: 80 acres**
LAWN MOWERS: 5 LOCKE TRIPLEX MODELS with SULKIES

"Our LOCKE mowers are used everywhere . . . on large cut-up sections, lawns with overhanging shrubbery, miles of walks and raised borders. They're so versatile, they eliminate secondary hand trimming operations, while cutting and trimming 8 to 10 acres a day. In the 10 years I have been on the department, I know only of minor problems and only in one instance where we had to make a cutter replacement. They certainly are the most dependable, most economical mowers we have ever had."

Mr. Richard Coakley
Park Department Foreman, Milford.

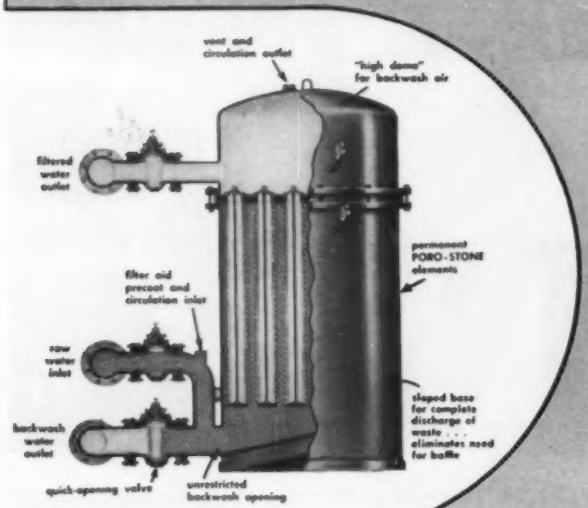
2 MODELS, 4 BASIC SIZES

25" & 30" — Single Models — Plain or Reverse
70" & 75" — Triplex Models — Plain or Reverse

ASK YOUR LOCKE DEALER FOR A FREE DEMONSTRATION. BE CONVINCED!

Locke **POWER LAWN MOWERS**
A product of LOCKE STEEL CHAIN CO.
1315 CONNECTICUT AVE. **BRIDGEPORT 1, CONN.**

Adams *NEW* IWF FILTER Can Help You Solve Your Municipal Water Problems!


vent and circulation outlet
"high dome" for backwash air
filtered water outlet
permanent PORO-STONE elements
filter aid precoat and circulation inlet
raw water inlet
backwash water outlet
sloped base for complete discharge of waste . . . eliminates need for baffle
quick-opening valve
unrestricted backwash opening

Is your budget short of funds for needed filter area? Would you like to add to your present filter capacity for peak loads *without* constructing new filter housing?

The R. P. Adams IWF filter is an ideal answer to each of these problems.

First, you can add a maximum of filter area at a minimum cost with the IWF. Other filters *may* cost less initially, but up-keep, labor and replacement parts will rapidly offset any such advantage.

Operating on *standby* condition, the IWF can be quickly placed on-stream for peak loads. It is simple and fast to clean . . . no disassembly necessary . . . after your peak demands have been met.

Waste space in your sand filter housing probably will accomodate the IWF . . . eliminating the need for costly new construction.

Write for your copy of Bulletin 651 for full details. If your city is planning a public swimming pool, you'll want to ask for Bulletin 626 as well.

Adams IWF Filters come in six basic sizes from 53 to 238 square feet of area . . . in multiple unit plants from 106 to more than 1000 square feet of filter area. Normally delivery can be made from stock on hand.

R. P. Adams Co., Inc.

202 East Park Drive, Buffalo 17, New York

SYLOY®

FIBER GLASS
TRAFFIC SIGNS

Cut ERECTION and MAINTENANCE Costs

Syloy® fiber glass-reinforced plastic signs have everything you've always looked for in a traffic marker:

- *Permanent molded-in color and legends*
- *Amazing light weight*
- *Superior visibility*
- *Completely weather-proof*
- *Outstanding resiliency*
- *Never need painting or touching-up*

Manufactured to the most exacting specifications, Syloy signs are easy to handle and lastingly trouble-free—tested and proven to slash erection and maintenance costs to a new low. Send in the coupon for full information and a sample of Syloy, the sign that makes others obsolete.

PERMANENT COLOR, FINISH AND LEGEND
Molded-in under extremely high pressure

LIGHTWEIGHT
Easier to handle and install

RUST-PROOF—NO REPAINTING
Weather can't hurt them

TOUGH AND DURABLE
Withstand elements and vandalism

Reinforced Plastics Division
GENERAL
THE GENERAL TIRE & RUBBER CO.

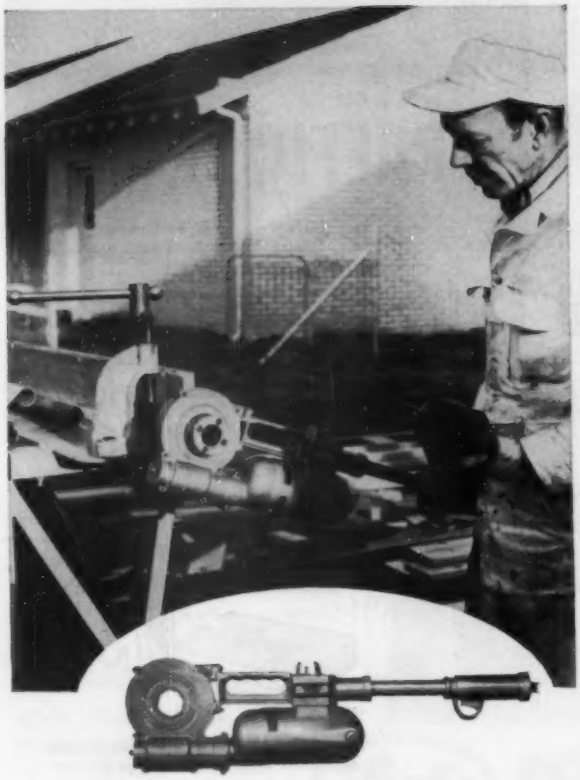
THE GENERAL TIRE & RUBBER COMPANY
Reinforced Plastics Division • MARION, INDIANA

THE GENERAL TIRE & RUBBER COMPANY
Marion, Indiana

☐ Please send me information on Syloy
☐ Please send me a sample Syloy sign

Name_____
Title_____
Company_____
City_____
State_____

7



Threads ¼" to 6" conduit in seconds—right on the job . . . the Lawco, Jr.

PORTABLE PIPE THREADER

Here's the answer to those slow, tiring, hand-threading jobs. The Lawco, Jr. Portable Pipe Threader does the work in seconds. This modern portable power tool threads the smallest to the largest conduit. Simple adapters and speed reducers handle pipe from ¼" to 6".

Its operation is simple. Just position Lawco, Jr. on the conduit, press the trigger, and the power unit drives the cutting dies. You're finished in no time, and right at the location where you are installing the conduit.

You'll find it handy, too, for pulling wire through conduit. The unit's portable feature speeds the work. Light in weight (20 lbs.), the Lawco, Jr. eliminates the need for hauling heavy, bulky threading machinery to every job.

Write us for more details on the versatility of this tool.

Driving nuts and bolts. Portable winch . . . easily hoists 500 lbs. Threads pipe in walls, small spaces. Augering—vertical or horizontal.

VELOCITY POWER TOOL COMPANY
201 North Braddock Avenue, Pittsburgh 8, Pennsylvania

What's in a Catch Basin

A catch basin cleaner by any other name than Hayward can hardly be as all-purpose effective. There's a Hayward—orange peel or clamshell—for every municipal handling job.

Write for Bulletin

THE HAYWARD COMPANY
50 Church Street, New York 7, N. Y.

Where you want nothing to grow

SS WEED-KILLER

Gets them fast
Gets them all
Keeps them off

Dolge SS WEED-KILLER is deadly to any weed it hits. After one thorough application of this potent soil-sterilant, unwanted plant life can't even get started through the growing season. . . . Safeguards parking lots, terraces, drives, walks, gutters, sand traps, courts, tracks and other areas against ruinous growth. . . .

Reduces fire hazard by eliminating flammable vegetation close to industrial locations. . . . Finishes such hardy pests as poison ivy, wild honeysuckle, bindweed, crabgrass. . . . Cuts ground maintenance costs drastically. . . . One gallon of SS WEED-KILLER in solution treats 1250 square feet on the average.

Write for free, up-to-the-minute booklet on weed control. See your Dolge Service Man

Dependable DOLGE
WESTPORT, CONNECTICUT

ONLY $5.07 A MONTH UPKEEP ON THIS TL-12

In 26 months, the City of Rice Lake, Wisconsin, spent only $132 in maintenance on their rugged, TL-12 TRACTOLOADER. That's only $5.07 per month to keep this four-wheel drive, 1⅛-yd loader on the job — every kind of a job, from street construction to snow removal.

It takes a well-designed, well-built machine to stand up to the rigors of all kinds of work at Rice Lake. The ideas, experience and workmanship of Tractomotive combine to give you this kind of rugged, dependable service in all models of TRACTOLOADERS — from ½ cu yd to 2¼ heaped.

Your Allis-Chalmers dealer is your Tractomotive dealer, too. See him for the most for your loader dollar.

TRACTOLOADER is a Tractomotive trademark.

TRACTO — *a sure sign of modern design*

SOLD AND SERVICED BY YOUR ALLIS-CHALMERS CONSTRUCTION MACHINERY DEALER

Send For Free Descriptive Literature

TRACTOMOTIVE

TRACTOMOTIVE CORPORATION • DEERFIELD, ILLINOIS

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Deerfield, Illinois

☐ Please send TRACTOLOADER literature
☐ Have salesman call

Name.....
Title.....
Company.....
Address.....
City..... State.....

Do you have AUTOMATIC MODERNIZATION in your water system?

If you have Trident water meters, your department is probably the only service in your community equipped with *Automatic Modernization* . . . a process which costs far less than "scrap and replace" programs.

Every time you replace work-worn parts in a Trident disc meter, you automatically use modern parts identical to those in the *latest* model . . . parts embodying every thoroughly tested advancement known to the science of metering.

No need to keep complicated stocks of parts for many models . . . just keep a small stock of modern parts. It's easier to train service men, too. Your men need learn only one simple, fool-proof model, and they can service all.

Designing modern Trident parts so they'll fit "old" meters has been a rigid Neptune policy for 60 years. *Every design improvement now on our drawing boards will continue this policy.*

It's your best assurance that the meters you buy today will continue to earn more and cost less for many decades to come.

This year's up-to-date parts make "modernization kit" for 12 million Tridents.

neptune
TRIDENT WATER METERS

NEPTUNE METER COMPANY
19 West 50th Street
New York 20, N. Y.

NEPTUNE METERS, LTD.
1430 Lakeshore Rd.
Toronto 14, Ont.
Branch Offices in Principal American and Canadian Cities.

36 INCH I.D. EL. 36IN.x24IN.FLANGE OUTLET.
First Officers Load City of Galesburg
WATER SUPPLY IMPROVEMENT
36in PRESTRESSED CONCRETE PRESSURE PIPE
Dayton Ohio

Citizens of Galesburg, Ill. were happy to see the first truckload of pipe arrive, for it meant the beginning of a pipeline designed to eliminate the city's future water supply problems. Project was approved by a majority vote at the polls.

Galesburg Goes 30 Miles to Get Plenty of Water

Thirty-mile pipeline to Mississippi River eliminates dependency on ground water supply

By K. K. STAPLETON
Casler & Stapleton
Consulting Engineers
Jacksonville, Ill.

BY midsummer of this year a 30.6-mile pipeline will wash away the water supply problems of Galesburg, Ill.

For the past 117 years an inadequate water supply hampered the city. First came a series of cisterns, then shallow wells and finally deep wells, the most recent ones ranging from 2,400 to 2,500 feet in depth. An engineering firm recommended construction of a surface supply as far back as 1910 and a similar recommendation was again made in 1945. The second time plans and specifications were prepared, but no action was taken. The city kept on drilling wells, and as the wells became deeper, so did the water table.

By 1955 Galesburg's population had reached 35,000 with a projected growth to 50,000 within the next few years. Modern devices meant greater demands for water, and to add to the problem, the Chamber of Commerce and civic leaders intensified their efforts to attract more industry to the city.

The City Council decided that definite action was required, and in November of 1955 engaged the engineering firm of Casler and Stapleton of Jacksonville, Ill. and John Blake, attorney in Galesburg, to make an engineering, legal and financial study of the various possibilities of increasing the water supply.

Ground Supplies Studied

Our studies and comprehensive report analyzed the possibility of obtaining water from several ground water supplies, from the four most desirable reservoirs out of a possible 25 within a 35 mile radius of the

Here workmen jack a 54-inch corrugated metal encasement pipe under a highway.

city, and from the sand and gravel in the lowlands adjacent to the Mississippi River. It also contained plans for constructing a 30.6-mile pipeline to the river as well as alternate plans on the most feasible reservoir sites. Finally, the report recommended construction of the pipeline and a collection system near the Mississippi River to obtain water from the aquifer adjacent to the river.

A citizens committee of 34 persons appointed by the mayor studied and unanimously endorsed the report. The council then accepted and approved the plan and directed the Citizens Committee, along with the attorney and engineers, to appear before all civic, professional, school and church groups to explain in detail the magnitude of the project, how it would work, how it would be financed and all relating details. In addition, the *Galesburg Register-Mail,* the local newspaper, carried daily question-and-answer columns as well as editorials on the project.

On November 6, 1956 the people expressed their approval of the project by a 57% majority vote. By so doing, they had voted upon themselves a $3,000,000 general obligation bond, a $2,300,000 revenue bond, and a water rate increase of 33%.

Galesburg's new supply will come from a Ranney Method collector system. This consists of a 13-foot diameter reinforced-concrete caisson constructed adjacent to the Mississippi River near the village of Oquawka, Ill. It reaches a depth of 100 feet below the river bed. Eight collector-screen pipes radiate from the bottom of the caisson. Each has a diameter of 12 inches and a length of about 225 feet, totaling 1,800 lineal feet. They will collect ground water and river water that has percolated through the sand and gravel. A hydrological survey indicates one collector under average conditions will provide a yield of 20.6 mgd and a minimum yield of 16.3 mgd under the most unfavorable river stages and conditions.

The pumping station on top of the caisson is divided into two sections; one housing two deep well turbine pumps with space for a third, and the other housing the chlorine and ventilating equipment.

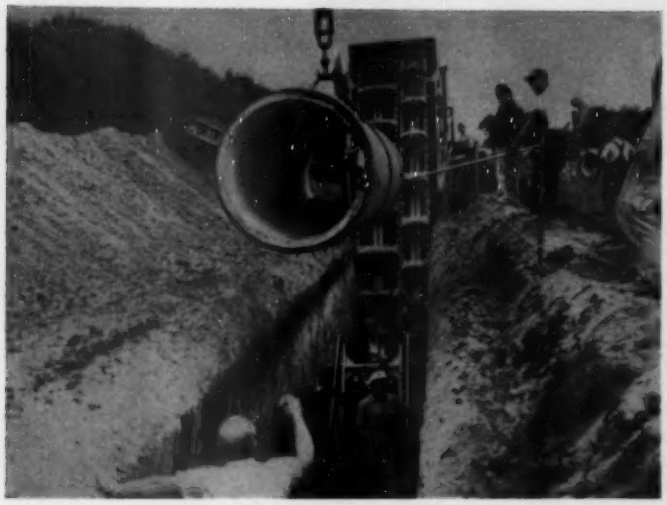
Pumping Equipment Driven by Electric Motors

Pumping equipment consists of Byron Jackson units, each rated at 7.2 mgd against a 410-foot head. Six-hundred-horsepower, 2,400-volt Westinghouse electric motors drive the pumps.

An electric substation located about 800 feet from the river and 5 feet above flood stage houses all electric switchgear, electric metering, and water metering and tele-

A formsetter puts finishing touches to the steel forms before pouring the first section of the 13foot-diameter caisson used to collect Mississippi River water.

Water rushes into the collector caisson from one of the laterals. When completed, eight such laterals, totaling 1,800 feet in length will collect in excess of 20 mgd of clear, naturally filtered water.



A large trencher excavates the 5-foot wide trench. Note line and grade stakes at right of trench. All pipe is laid to a calculated grade.

metering equipment. The Builders-Providence, Division of B-I-F Industries, telemetering and supervisory control equipment makes the station completely automatic. Recorders in the Main Street Station in Galesburg indicate, record and totalize quantities of water pumped both over the transmission line and to the distribution system and elevated storage. Telemetering equipment also provides automatic control over all operations at the River Pumping and Control Station, including the chlorinator.

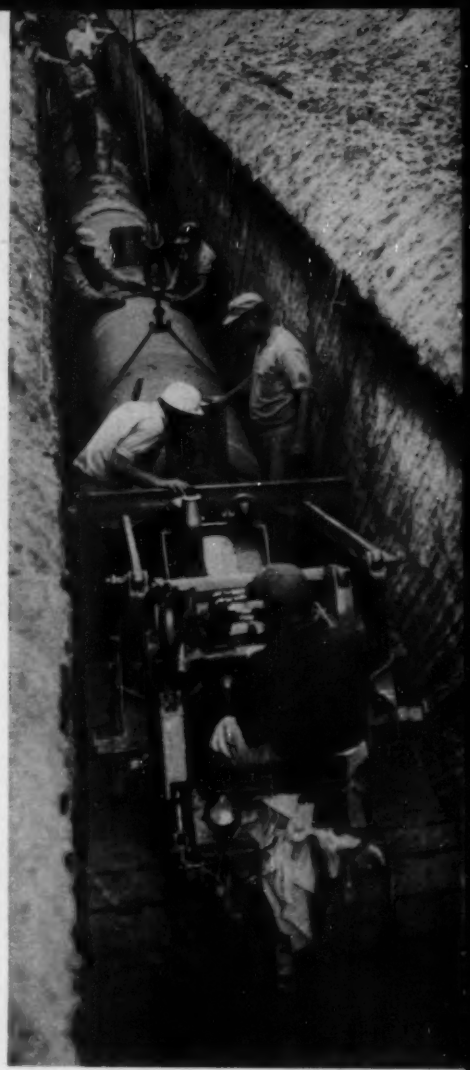
The pipeline specifications allowed contractors to bid on cast-iron; steel, coated and wrapped; and prestressed-concrete cylinder pipe. More than 60 contractors, material and supply dealers throughout the United States took out plans and specifications, and 24 submitted proposals, some from groups of contractors acting as a single contractor. Bids received were approximately 1% under estimates, with prestressed-concrete cylinder pipe some $894,000 less than cast iron. No bids were submitted on steel.

Many people were unfamiliar with the concrete pressure pipe, so Price Brothers Co., Dayton, Ohio, one of the low bidders, sent to Galesburg a truck containing a 16-foot section of 36-inch pipe and several fittings.

Change in City Government

By this time a planned change in government had taken place. The council-manager government, consisting of a mayor, four councilmen, and city manager, replaced the former system, consisting of a mayor and 14 aldermen. These officials had pledged their support to the water supply program. They took office shortly after bids had been received, awarded contracts, and since then have kept the work on schedule.

Contracts for the manufacturer of 161,775 feet of prestressed-concrete cylinder pipe went to two companies. Price Brothers Co., Dayton, Ohio are delivering 88,984 feet of 36-inch pipe and Lock Joint Pipe Co., East Orange, N. J. is supplying 45,411 feet of 36-inch pipe and 27,380 feet of 42-inch pipe. Twenty-five trucks are in continuous use between Dayton and the job, each carrying six 16-foot sections, and six trucks operate from the Lock Joint plant in Beloit, Wis., each carrying five 16-foot sections. Deliveries average about 1,000 feet of pipe per day, and we estimate the project will require about 1,750 truckloads and a driving distance of 1,225,000 miles just to supply the pipe.



This John Deere tractor, replacing the cable-and-pulley method of joining pipe sections, increased laying speed.

The pipeline will run up and over a 216-foot bluff across farmland in three counties and terminate at a 5,000,000-gallon storage reservoir. From here the Main Street Pumping Station pumps deliver the water to 110 miles of distribution mains and three elevated storage tanks.

The line will include an outlet connection at about the midway point for possible future use by the City

Construction Contractors

Contractor	Contract
Caldwell Engineering Co. of Jacksonville, Ill.	Pumping station and control station buildings and Main Street Station remodeling.
Ranney Method Water Supplies Inc. of Columbus, Ohio	Collector and hydrological survey.
Sherer Engineering Co. of Carthage, Ill.	Pipeline.
White Brothers Trucking Co. of Waco, Ill. and Dayton, Ohio	Transportation of pipe.

of Monmouth, Ill. (population about 10,000) and some 110 1-inch threaded service connections to serve the farmers along the line from which right-of-way was secured. Its design provides for a capacity of 24 mgd without a booster station, and more than 36 mgd with booster pumps.

After considerable negotiation, all farmers signed right-of-way agreements, and not a single piece of property had to be condemned. This right-of-way is 100 feet wide for construction purposes, of which 50 feet will be retained permanently for maintenance and upkeep.

The pipeline contractor operates a well-equipped and well-organized crew. In sandy soil a 1¼-yard Northwest backhoe does the excavating, and in the level, black prairie soil a Parsons ditcher excavates the 5-foot wide trench. Specifications call for removing and replacing the top 18 inches of top soil to maintain the agricultural value of the land and require the contractor to maintain the trench for one year after completion of the project.

A large Caterpillar bulldozer and a motor patrol remove the top soil, replace it, and backfill the trench. A small John Deere end loader works in the trench, digging the bell holes, shaping the trench bottom to grade and butting the pipe together. A 1½-yard Northwest crane handles the 16-foot pipe sections.

Galesburg was one of eleven cities that received the title of "All-America City" of 1957 in a contest sponsored by the National Municipal League and *Look* Magazine. The award was in recognition of civic improvements during 1957, and the water improvement program played an important part in winning the award.

Galesburg's water improvement program also includes modernizing the Main Street Pumping Station constructed in 1927. The work includes new suction and discharge piping, new Aurora high service pumps and new Westinghouse switchgear.

Completion of the project will mean more water for those who want it, but to the water works superintendent, it will mean the end to one of his biggest problems.

Rochester, N. Y. Uses Prefabricated Metal Buildings

BECAUSE they are economical to buy, are portable, can be erected by one or more men in a few hours, and require practically no maintenance during a long work life, small prefabricated metal buildings can be used for a wide variety of purposes by municipalities.

Typical of cities using them is Rochester, N. Y., which has purchased six of the garage-type made by Nuside Metal Products, Inc., from Galvanite steel produced by Sharon Steel Corp., Sharon, Pa. Two are in use by the park department to house artificial rink ice-making equipment, one is being used by the Department of Weights and Measures for general storage and the Fire and Police Training Academy have two. One of these has a 24-foot front, large enough to accommodate a small truck.

Portable equipment building at Webster Park, Rochester, N. Y. houses ice-making equipment. Artificial ice skating rink is shown in the foreground.

Prefabricated buildings are designed for easy and swift erection. Every nail and screw required is provided by the manufacturer. All of these buildings have a structural steel framework and metal roof and come with overhead door. The steel siding is applied in the manner of clapboards and each section interlocks with an overhang to provide weather-proofing.

Light enough to move from place to place by truck, these buildings also can serve as permanent structures. In such instances, it is customary to mount them on corner blocks and pour concrete for a floor. Some uses to which they are being put by municipalities include voting booths, tool houses, truck and private car garages, equipment storage, zoo pens, shelters, food dispensing booths and information centers.

Shown at left is a garage-type prefabricated building owned by the Rochester Fire and Police Training Academy, measuring 40 feet x 24 feet x 11 feet to eaves. At right is the portable storehouse belonging to the Department of Weights and Measures.

mechanism manufactured by Walker

By J. A. HETTER
City Manager
Owensboro, Ky.

John E. O'Brien, resident engineer, explains various features of the central control panel to James B. Robey, administrative assistant.

Owensboro, Ky. Helps Clean Up the Ohio

New sewage purification plant designed to fit the overall pollution abatement program established to reclaim the Ohio River

THE Ohio River is one step closer to its historic beauty and purity through the recent action of our city. A new sewage treatment plant, dedicated early this spring, serves as the city's contribution to a cleaner Ohio River. We took action on this project in 1955 by engaging the engineering firms of Consoer, Townsend & Associates of Chicago and Johnson, Depp & Quisenberry of Owensboro to design a treatment plant and the necessary interceptors and pump stations. The basis for design, as established by the Kentucky Water Pollution Control Commission, consisted of the substantially complete removal of settleable solids, removal of not less than 45% of the total suspended solids, and reduction in coliform organisms in accordance with the seasons of the year. This called for a primary plant with disinfection of the plant effluent.

Our engineers designed the plant

Sludge drying facilities consist of eight sand beds. Plant structures can be seen in the background.

Two chemical pumps add chlorine to the plant effluent.

to serve an expected 1980 population of 55,500 persons. The accompanying table lists the basic data.

A 30-inch force main discharges the sewage into an influent channel at an elevation permitting the flow to pass through all plant units without additional pumping. The sewage is first measured by means of a measuring flume and Simplex indicating, recording and totalizing instruments, then it passes through a Chicago Pump Co. Barminutor into the grit chamber. Although the screen has a 20-mgd capacity, plant facilities include a hand-raked bypass bar screen and an adjustable bypass weir that will automatically bypass flows in excess of 16 mgd. Bypass flows pass through a measuring flume and are discharged either into the chlorine contact tank or plant outfall sewer.

Types of Equipment

The concrete grit chamber is 12 feet long, 16 feet wide, and has an average liquid depth of 11 feet. Equipment includes Chicago Pump Co. swing-type aeration equipment and a Hapman-Dutton enclosed pipe conveyor for removal of the settled material. The tank volume of 16,000 gallons provides a 3.1-minute detention period at the design average flow of 7.5 million gallons per day.

An aerated channel conveys the sewage from the grit chamber to the sedimentation basins. These consist of three identical units 37.5 feet wide, 110 feet long, and 8 feet average water depth. Each tank contains two straight line sludge collector mechanisms and one cross collector mechanism manufactured by Walker Process Equipment Co. They also contain transverse cylindrical scum troughs located near the outlet end. The 10 longitudinal effluent troughs in each tank are 20 feet long and have 112 V-notched weirs per trough.

The total volume of the three tanks amounts to 99,000 cubic feet, or 740,000 gallons. At 7.5 mgd they provide a 2.37 hour detention period and a settling rate of 606 gallons per square foot per day. The overflow rate per V-notch per day amounts to 2,240 gallons.

A Parshall flume in the concrete effluent channel of each tank indicates the rate of flow through the tank. Sewage flow to each tank can be controlled by throttling gates at the influent end.

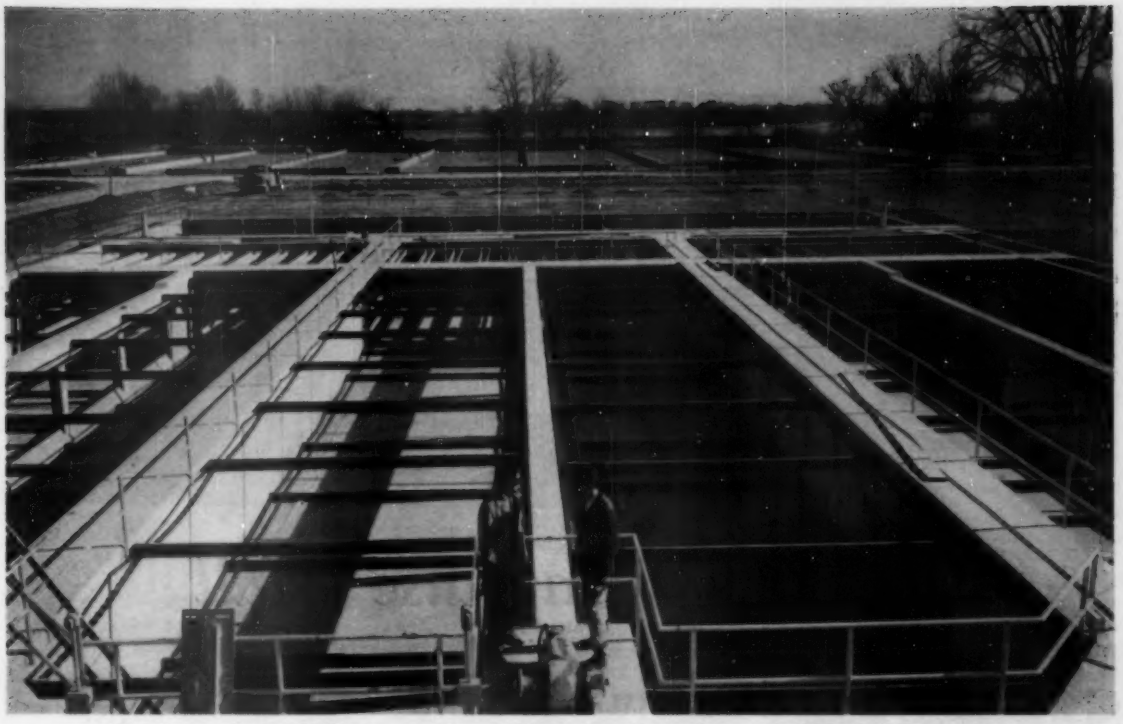
Effluent from the primary basins passes through a chlorine tank before being discharged into the river. This tank is 107.5 feet long, 24 feet wide, and has an average liquid depth of 6.63 feet. The net volume of 122,000 gallons provides a 23-minute detention period at 7.5 mgd. The two Wallace & Tiernan 2,000 pound per 24 hour chlorinators have sufficient capacity to permit dosing the average design flow of 7.5 mgd at a rate of 20 ppm. A 36-inch gravity main conveys the treated sewage to the river.

Separate Sludge Digestion

Sludge digestion takes place in a single concrete and brick digester 85 feet in diameter with a 23-foot sidewall depth at the circumference and

Basic Design Data

		1954	Design 1980
Population—	Total	43,800	55,500
	Connected	30,000	48,600
Sewage Flow Rates—	Minimum	2.82 mgd	4.50 mgd
	Average	4.70 mgd	7.50 mgd
	Maximum	7.25 mgd	11.50 mgd
	Peak	.....	16.00 mgd
B.O.D. Raw Sewage—		167 lbs./cap/day 5,000 lbs./day	167 lbs./cap/day 8,120 lbs./day
Suspended Solids—Raw Sewage—		20 lbs./cap/day 6,000 lbs./day	20 lbs./cap/day 9,720 lbs./day
Volatile Suspended Solids—Raw Sewage (75% Suspended Solids)		4,500 lbs./day	7,290 lbs./day



The three sedimentation basins provide a 2.37-hour detention period at the 7.5-mgd design capacity.

a 7-foot deep cone-type hopper bottom. Equipment includes a Chicago Pump Co. heat exchanger and digester cover and Pacific Flush Tank gas equipment and rotating sludge valves.

Piping arrangements permit sludge additions to the digester through separate lines at opposite walls and at the center of the tank. Sludge can be withdrawn from the center at the tank bottom and supernatant liquor can be withdrawn from various levels.

The total tank volume of 143,840 cubic feet results in a digester volume of 2.96 cubic feet per capita based on the estimated connected population in 1980.

Sludge-drying facilities consist of eight open sand beds each 40 feet by 150 feet in size. The total area of 48,000 square feet is equivalent to one square foot per design capita.

We have purchased an International Harvester tractor with a bucket-type end loader to remove, load, and stockpile the dried sludge. Facilities also permit the loading of liquid digested sludge into tank trucks for disposal upon land.

The main control building houses the raw sludge pumps, drainage pumps, air blowers, chlorination equipment, motor control center and miscellaneous equipment. A pipe tunnel connects this building with the digester control building.

Owensboro's collection system is of the combined type with 10 outlets to the Ohio River varying in size from 18 to 96 inches. The system is planned around three main trunk sewers and their branches. To eliminate the discharge of sanitary sewage into the river and convey it to the plant required the construction of both gravity and force mains and three lift stations. Each station consists of two Worthington pumps of equal ratings as follows:

Dublin Lane Station—two 1,600 gpm units
Center Street Station—two 2,400 gpm units
Locust Street Station—two 9,000 gpm units

The pumps in the Locust Street Station are driven by Electric Machinery Co. constant speed motors connected to the pump through magnetic drives that will automatically vary pump speed according to the sewage flow. The pumps will automatically alternate in operation at the three stations.

Each pump station contains a Link-Belt mechanical trash screen for pump protection and a small elevator to facilitate maintenance of equipment. Pump sizes are such as to permit the handling of sewage flows in excess of the expected 1980 dry weather flows with only one unit running at each station. Motor-operated Rodney-Hunt sluice gates at the entrance to each station protect the screen chamber sections from flooding by storm flows during high river stages. These are controlled by floats in the wet well.

Bond Financed

We split the work into three divisions and awarded contracts on September 15, 1956 as follows:

Division A — Sewage Treatment Plant—to Markwell & Hartz of Memphis, Tenn. Amount—$733,586.

Division B—Pumping Stations—to Clark Construction Co. of Owensboro, Amount—$1,005,281.

Division C—Intercepting Sewers—to Roy Ryan Sons, Inc. of Evansville, Ind. Amount—$626,679.

The city financed the project through a $2,800,000 sewer revenue bond issue to be paid off in 40 years at an average interest rate of 4.22%. In 1953 Owensboro issued $750,000 in sewer revenue bonds based on a sewer service charge of 50% of the water bill, so it became necessary to increase the charge to 100% of the water bill to carry the new bond payments. This revenue also finances the operation and maintenance of the entire sewer system.

involved the minor denting of a

Left:
This was downtown, Springfield, Ore., prior to the Shoppers' Paradise experiment.

Right:
The same street is transformed into a pedestrian mall awaiting opening of 10-day test.

Shoppers' Paradise Mall

By DONALD H. LUTES A.I.A.
President
Springfield Planning Commission
and
E. ROBERT TURNER
City Manager
Springfield, Ore.

SPRINGFIELD recently completed an experiment in planning. For ten days the downtown core was drastically changed in physical plan. A great many planners and administrators in other cities have talked about this type of development. Some have gone far enough to draw plans. Springfield decided to try to put these plans to a test. This is what was learned.

There was ample reason to try something. Any casual visitor could see symptoms of physical deterioration, vacant store buildings, and lack of maintenance in the central commercial core. Springfield's retail volume was far less than other Oregon communities of comparable size. The downtown area carried a traffic volume of over 10,000 vehicles per day. Logging trucks passed through the commercial district at a rate of one every five minutes, causing congestion and endangering pedestrians. Moreover, the downtown area was physically unattractive, not conducive to pleasant shopping.

As a result, the Chamber of Commerce agreed to sponsor a six-month evaluation of downtown conditions. This work was done as a public service by Lutes and Amundson, architects and planners, and resulted in an experimental plan which became "Shoppers' Paradise."

The plan was then explained to the City Planning Commission and to the city administration, who gave their endorsement and support. The City Council formally adopted the plan and passed the necessary ordinances and resolutions to implement it. After municipal approval, the Oregon Highway Department agreed to re-route the state highway traffic around downtown during the experiment.

The merchants raised a fund of $3,500, spent $2,900 for construction, including scaffolding, signs, street markings and landscaping. The balance went for exhibits and attractions. Individual merchants advertised in conformance with the theme of the program.

Four Objectives

The experiment had to determine whether the physical layout of downtown Springfield could be adapted to provide more convenient shopping conditions. To do this, four objectives were established:

1. Relieve traffic congestion by re-routing "through" traffic.
2. Provide more convenient parking facilities.
3. Permit the shopper to do his shopping without conflict with auto and truck traffic.
4. Provide the shopper with facilities not normally found in downtown shopping areas, including benches, entertainment, music and landscaping.

To relieve traffic congestion, the highway was bypassed one block to the north of the business area, separating the rapidly moving "through" traffic from the locale. Thus, a portion of Main Street could be transformed into a pedestrian mall.

To provide added parking facilities, the ends of Main Street adjacent to the mall were used as diagonal parking lots. The streets intersecting the mall were utilized in the same manner. Thus, the shopper was brought to the edge of the shopping area, but not into it. Parking meters were not in operation during the experiment. This was possible because meter revenue is earmarked for the acquisition of off-street parking and does not affect the city's general fund in any way.

To give the shopper more freedom of action, a portion of Main Street was converted into a pedestrian mall, landscaped and decorated with exhibits and attractions. The traffic noise was replaced with relaxing music. Children's attractions were installed, stores remained open until 9:00 p.m., and a short entertainment feature was presented each evening. Businesses outside of the mall were invited to participate with auto and boat displays.

During and after the ten-day experiment, an objective evaluation was made. Traffic counts were made; attendance figures measured; and questionnaires submitted to mer-

chants with a postcard survey of shoppers' opinion.

The event brought an average of 432 extra cars into the shopping area per day. Roughly 60% of the shoppers were local Springfield people and 40% came from neighboring communities. Merchants on the mall experienced a 14% increase in business, compared to any ten-day period of the previous August. Merchants off the mall experienced a 5% decline.

Of the merchants located on the mall, 78% considered the experiment a success and 52% thought the mall should be made permanent. Of those off the mall, only 36% thought it a success and only 10% wanted it to be made permanent. Shoppers voted in favor of the mall by a flat 77%.

Everyone agreed that the removal of truck traffic from downtown Springfield was a great improvement. Not everyone was as thoroughly sold on the removal of auto traffic, but the elimination of traffic noise impressed more people than any other single aspect of the experiment. One objection was that some businesses not in the area of the mall did not benefit from exclusively pedestrian traffic.

Shoppers liked the environment created by the mall and the freedom of movement. The art and industry exhibits enhanced it. The background music put everyone in a relaxed mood, and one merchant commented that he didn't have a single angry customer all week.

From a municipal standpoint, the experiment was a great success. We learned that traffic patterns could be completely changed in our downtown area without confusion. Instead of receiving hundreds of complaints as was anticipated, not one irate motorist or pedestrian called the city hall or any councilman during the experiment. The accident rate dropped. Only one accident occurred and that involved the minor denting of a fender. We found that our relatively narrow side streets could be used as parking lots. The 40-foot wide streets, to our surpise, accommodated diagonal parking on both sides quite well.

Much was also learned about channeling traffic through the city and into designated parking areas. The large signs that were designed had spectacular success. The State Highway Department was particularly impressed with the fact that they worked so well.

Best of all was the evidence of cooperative spirit by all agencies. The key factor was the initiative provided by the merchants themselves. This program was not "dreamed up" by the city government and forced on the retail community, but it was rather the results of definite, dynamic downtown leadership.

Whether the mall principle or some modification of it is adopted is going to depend primarily on these same merchants, and not on the city government. The city has a positive interest in any measure that keeps downtown in a healthy state. When any area deteriorates, property values drop and the entire community suffers; but ultimately, upon the initiative of the downtown merchant and property owner, in the best traditions of free enterprise, depends the future of downtown Springfield —and downtown U. S. A.

The City of Springfield in cooperation with several progressive downtown merchants has formed the Shoppers Paradise Publicity Committee which in turn has prepared a comprehensive report on the ten-day test. Copies will be supplied to those interested at $1 each. A 24-minute sound film of the event has been prepared for loan to communities and will start on a "second round" of showings about August.

An example of the lighted traffic and parking signs used during test.

Shoppers' Paradise at night. This was the time when the mall area had its biggest crowds. As many as 5,000 people visited downtown each evening during experiment.

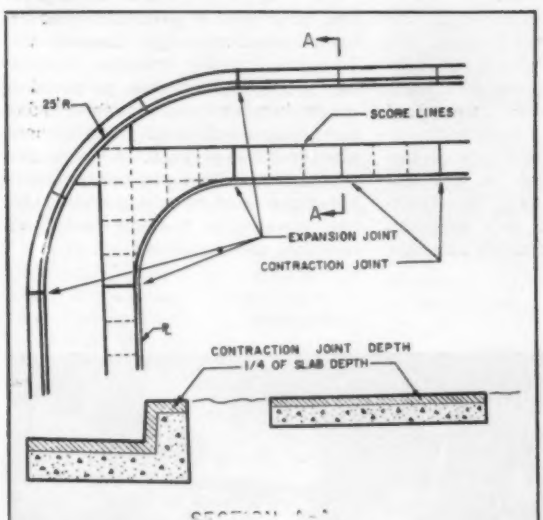
PHOTOS BY J. P. COLLEY, ASSISTANT CITY ENGINEER

A close-up of the 1/8-inch metal contraction strip used by Redlands, Calif.

An experienced finisher carefully edges

Sidewalks, Curbs, Gutters

By PHILIP E. JOHNSON
City Engineer & Street Superintendent
Redlands, Calif.



Note:
1. All contraction joints in curb and gutter shall be opposite those in sidewalk.
2. Expansion joints at all curb and sidewalk returns.
3. Contraction joints placed:
   12' on cc for 4' and 5' sidewalk.
   15' on cc for 5' sidewalk.
4. Score lines spaced equal to sidewalk width.

Redland's typical plan for curb, gutter, and sidewalk work.

FOR several years, highway engineers have been building concrete highways without the abundance of expansion joints that characterized paving practice prior to World War II. Instead, the designers provide sawed joints or formed indentations, about one-fourth the slab thickness, to control concrete shrinkage cracks.

In the spring of 1956, the engineering staff of the City of Redlands decided to try this practice for concrete curbs, gutters and sidewalks. During the summer of 1956, we installed test sections of curb and gutter and sidewalk, using contraction joints spaced at about 15-foot intervals, and expansion joints only at the block corners.

We found that where the concrete—particularly in curbs and gutters—had formerly cracked at intervals ranging from 10 to 18 feet, all cracks were now confined to the straight-line contraction joints. No damage from expansion resulted. We expect that the split-level displacement of walks by tree roots, which occurs occasionally at expansion joints, will be completely eliminated by the keying effect of the ragged break within the slab beneath the contraction joint.

As a result of the successful test sections, Redlands adopted a revised standard specification in August 1956. Since then over 40,000 linear feet of curb and gutter, and 10,000 square feet of sidewalk have been installed in Redlands. The results have been increasingly satisfactory as our experience has brought improved techniques.

Construction Procedure

The great majority of street improvements in Redlands are installed by private contractors as new subdivisions are developed. Ordinarily, both sidewalk and

each side, with the metal strip raised slightly.

Contractor Braga (left) and Inspector Watson point out joints on finished curb.

Designed Highway Style

curb and gutter are required, in some cases adjacent to one another, but more often separated by an 8-foot parkway. For the sake of simplicity, contraction joints in the curb and gutter are placed directly opposite those in the sidewalk.

Our sidewalks are scored in squares; 4-foot squares in the standard 4-foot width, 5- and 6-foot squares where those widths are used. Every third score is made a contraction joint for the 4- and 5-foot widths, giving contraction joint spacings of 12 and 15 feet, respectively. Where 6-foot walks are installed, every other score is made a contraction joint. A minimum 6-foot walk is required where the sidewalk is installed adjacent to the curb.

How Joints Are Made

Contraction joints may be made by sawing, by placing thin strips of some expendable material in the freshly placed concrete to be left in place, or by placing narrow strips of metal or wood in the fresh concrete and removing these strips after the concrete has taken its initial set. Sawed joints, the first method listed above, would not be satisfactory for a curb and gutter section. However, the use of expendable strips to form the contraction joint has been used successfully in the neighboring city of Corona recently.

Our experience has been confined to the use of reusable forms consisting of strips of metal or wood, one-eighth of an inch thick. These are cut to fit into the top surface of the curb and gutter or sidewalk cross section, penetrating to a depth of one-fourth the thickness of the concrete slab.

In some instances contractors have removed the joint form while the concrete was still fairly plastic, and then finished the joint with an ordinary scoring tool. When this method is used, contraction joints are not distinguishable from regular score lines, yet shrinkage cracks are successfully controlled. Other contractors have filled contraction joints with grout after the jointing form is removed. While these variations are acceptable, it is still a matter of taste as to whether the appearance of the finished product is enhanced by such refinements. The ⅛-inch open contraction joints, shown in the accompanying illustrations, are neat and scarcely noticeable to the casual observer.

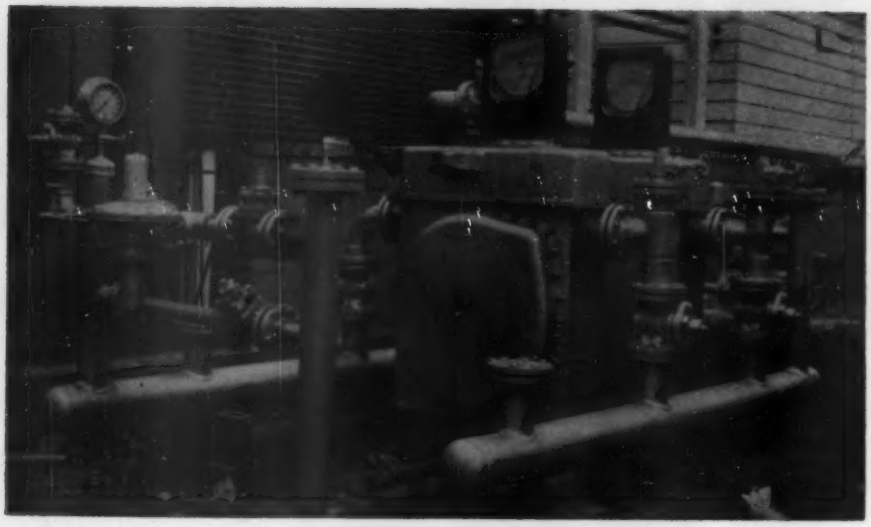
No Difference In Cost

In Redlands, the cost of making contraction joints has not yet resulted in any increase in prices bid for curb, gutter and sidewalk.

It perhaps should be noted that at the same time specifications requiring contraction joints went into effect, we also began the practice of laying a nominal 1-inch sand cushion beneath sidewalks. This requirement was not made in connection with the experiment with contraction joints, however. Corona has had equally successful experience with the contraction joint technique without the use of the sand cushion.

Excellent Work By Inspectors

Much of the success of our experience with this new technique is due to the fine work of the Engineering Department inspectors, Beverly Robertson and Floyd Watson, and to the fine cooperation we have had from the contractors doing the actual work. We are well satisfied with the results obtained since the adoption of this jointing practice, which we expect to retain and incorporate as a permanent part of our curb and gutter specifications.



Meters for industrial service require substantial installation work.

How Natural Gas Came to Dalton, Ga.

Textile town builds 42-mile transmission line and new distribution system with the support of 30-to-1 popular vote

IN 1952, natural gas was 42 miles away from Dalton. But Dalton wanted that natural gas—and today she has it, thanks to the aggressive policies of the municipal utility group known by the rather unusual name of Water, Light and Sinking Fund Commission.

Dalton is a textile center in northwest Georgia, with a population of about 18,000. It has a large chenile industry that could use this clean, low-cost gas to good advantage. Moreover, the homes and business

Utilities Engineer V. D. Parrott, left, and Commissioners H. C. Trammell, F. R. Jolly and H. P. Manley were instrumental in introducing an aggressive program that has brought about the benefits of natural gas to the citizens of their city.

Inspectors check all the pipe electronically for possible breaks in the insulation and for positive coating protection.

In Dalton, automatic billing equipment handles all the utility accounting, water, sewerage, gas and electricity before customers receive their processed bills.

A Cleveland trencher helps enlarge the city's gas distribution system.

in Dalton wanted the convenience, cleanliness and economy of natural gas. So the Commission set out to hurdle this 42-mile barrier. By way of explanation, it should be noted that gas service was not a new activity for the Commission. For many years it has had an old manufactured-gas plant supported by Propane. However, it served the business district chiefly, and was not dependable for residential use.

To get the dependable supply, the Commission built an 8-inch welded steel line to Rome, Ga. This line has been designed to bring gas at 375 pounds per square inch; currently it is being transmitted at 150 pounds. As the demand increases, the pressure can be boosted and the volume increased. The line is protected with bitumastic enamel, covered with flexible glass fiber and Kraft paper.

At the same time, the Commission had to build an entirely new distribution system to serve the city itself and its outlying area. This supplies between 4,000 and 5,000 customers plus some 400 more on the 42-mile transmission line.

This distribution system required 340 miles of pipe. This was Youngstown steel pipe in 50-foot lengths, all welded, and protected in the same manner as the transmission line. The gas passes through Fischer regulators so that it circulates in the distribution system at 5 pounds. The meter at each home and industry further reduced the pressure to 4 ounces. Rockwell meters are used throughout the distribution system.

All services, particularly to the homes, receive a maximum of 100 feet of pipe for the $10 installation charge. Two homes are supplied from each service line.

To pay for the gas, the charges are based on therms rather than volume of gas. What the customer wants is heat, and the heating qualities of the gas can vary somewhat, irrespective of the volume delivered. The number of therms can be obtained by multiplying the volume of the gas in cubic feet by the BTU's per cubic foot, and dividing this by 100,000. The BTU value is posted in each monthly bill. The detailed rate is as follows:

Therms	Per Therm
First 3	minimum
Next 100	$0.089
Next 257	0.069
Next 240	0.055
Excess	0.052

The minimum charge per month is $1.25

The billing is combined with other utility bills and is processed on National Cash Register automatic billing equipment, housed in a smart new utility building with the office department at the front and maintenance and repair shops at the rear.

The installation of the distribution system was an extensive task for the city, requiring a good deal of patience on the part of the public. The contractor used a Cleveland trencher to open the trenches and used electronic equipment to test all pipe and see that the coating provided a positive protection. In addition, Electro Rust Proofing cathodic protection has been provided to insure that the pipe will give long, trouble-free life.

The transmission line and distribution system was designed, and its construction supervised, by Goodwin Engineers, Inc., of Birmingham. Mr. W. H. Dubose was resident engineer. A bond issue of $3,000,000 was required to build this system. The bond issue carried by the overwhelming vote of 30 to 1.

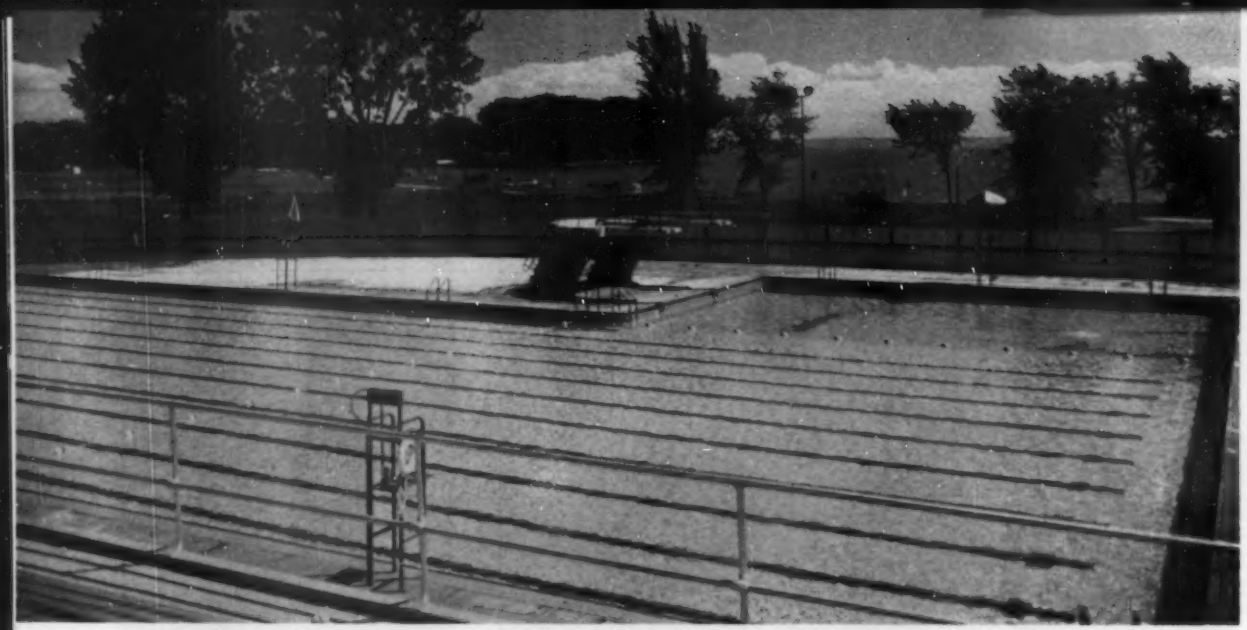
The operation of the system is one of the responsibilities of V. D. Parrott, Utilities Engineer for the Commission.

Refuse Collection Riskiest

THE PUBLIC PERSONNEL Association reports, from studies in Cleveland, Ohio and Sacramento, Calif., that the city refuse collector has a more hazardous job than the policeman or fireman.

In Cleveland, the accident rate was 600 a year in a staff of 1,740, with over 1,000 man-days lost. In Sacramento accidents in the waste removal department totaled 66 in a staff of 112 for 1957.

Main causes for accidents among garbage collectors in Cleveland were summarized as being due to sprained back or ankles as a result of handling over-sized containers; lacerated hands due to broken glass; and rat bites.



Some New Ideas in a Swimming Pool

Menasha, Wis. puts some fresh thoughts to work in its community recreation program

By H. S. SMITH, *Partner*
Stanley Engineering Company
Muscatine, Iowa and Chicago, Ill.

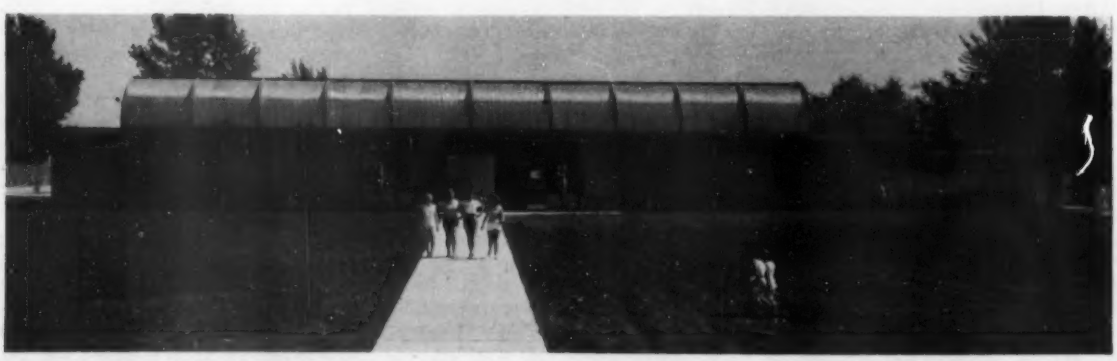
AN inviting, attractive and outstanding swimming pool to meet a recreation need for all age groups, functionally efficient and constructed for long life and minimum maintenance.

These key criteria guided Menasha, Wis. and its consulting engineers, Stanley Engineering Company in the development of Menasha's new municipal pool which opened in August 1957. Favorable judgment on the fulfillment of these criteria has been rendered by the 30,000 patrons and thousands of spectators who used and viewed the pool in its short 1957 operating period.

The project, constructed under the administration of Mayor R. R. DuCharme, is the culmination of community effort initiated in 1954. Mayor John Scanlon, in office at that time, appointed a Citizens Swimming Pool Committee under the aggressive leadership of Ralph Risley. The Committee was wisely chosen to provide a cross section of industrial management, industrial labor, commercial, professional and civic interests.

Menasha is located on the north shore of Lake Winnebago at the outlet to the Lower Fox River. Industrial pollution eliminated use of this stream for natural recreational uses. The very presence of the lake and river without adequate swimming facilities tended to emphasize the lack of this activity.

The Swimming Pool Committee, and its consultants recognized that so-called "standard" designs fell short of their objectives. The resulting de-



Menasha's new pool adds beauty to the park site it occupies. Ample space in front of the entrance provides parking for 125 cars.

spaces or by double use of tote bas- with the treatment building storage equipped with an orifice-actuated in-

Left:
Spectators seated in the grandstand have an unobstructed view of all racing lanes.

Right:
Fenced off from the main pool are separate pools for instruction, beginners' practice and wading. This means safety and efficiency. Note grandstand and patio in the background.

sign is based on fundamentally sound and proven engineering and architectural principles and details but is not "standard" in any sense of the word.

General Arrangement

The selected site, one of eight studied, lies adjacent to the city's Jefferson Park, providing a beautiful natural setting overlooking Lake Winnebago and its outlet to the Lower Fox River. The pool is oriented so that the grandstand above the bathhouse looks southeasterly over the lake, taking full advantage of the scenic setting.

The 50-meter long by 75-foot wide main pool provides ten 50-meter racing lanes, each marked with permanent red quarry tile in the pool floor and by removable surface ropes and floats during meets. The 25-yard (75-foot) width is useful for short-distance racing. Nominal dimensions are increased by one inch to insure officially accepted records.

The 45-foot x 60-foot diving area provides ample space for two 1-meter and two 3-meter boards. The 3-meter boards are mounted on a common deck. Diving area under-water observation windows from the pipe gallery surrounding the pool aid diving instruction. Instructors' comments to the students can be given over the public address system through microphone outlets at the observation windows.

A 30-foot x 50-foot pool, separated from the main pool by a low fence and gates, provides an instruction and beginners' practice area.

A 15-foot x 30-foot wading pool, separated by a 6-foot high fence, is accessible from outside the main pool area. Experience shows that direct supervision of the small users of this pool by a parent or adult is necessary. Small tots can be placed directly in the wading pool and their parents can watch over them from an adjoining covered patio. The patio is adjacent to the concessions stand and provides a sheltered refreshment center outside the main pool area.

Nonswimmer Facilities

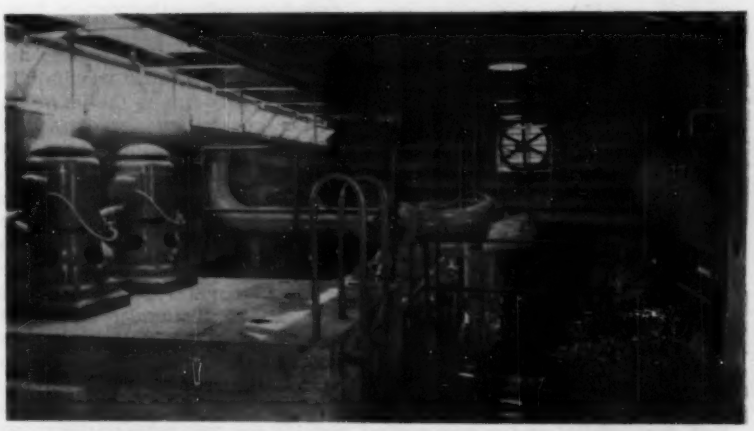
The top of the bathhouse serves as a grandstand seating 700 spectators, all with clear view of the entire length of all racing lanes and the diving areas. Spectator access to the grandstand is from outside the pool. Free access to the grandstand is normally permitted, but the grandstand can be controlled or closed off. Seating capacity for spectators can be doubled by temporary bleachers on the decks around the swimming pool.

A Fiberglas canopy shielding the grandstands shades the stands from afternoon sun and acts as a barrier between the grandstand and the open-roof areas over the dressing rooms. Area lighting for this side of the pool, mounted on the underside of the canopy, results in a striking water-green diffused light effect from the front of the bathhouse.

Total area within the pool enclosure is one acre, half of which is concrete deck. This ample deck area recognizes the need of adequate sunbathing and lounging space around the pool for relaxing purposes.

Bathhouse

The bathhouse is designed for normal pool loading of 1,000 persons, but more than 1,500 can easily be accommodated by utilizing special storage



The municipal swimming pool has a well-planned treatment building that provides space and headroom for general operations, maintenance, repair work and storage.

spaces or by double use of tote baskets.

The pool management and supervisory center is also located in the bathhouse. A combined supervisor's office and first-aid room projects slightly into the deck area and is completely glass-enclosed providing a view of all parts of the pool area. The first-aid area can be made private by an accordion partition and curtains. Separate staff shower and locker rooms are provided in the central staff area.

Careful attention was given to traffic control through the bathhouse. Normal pattern entering the pool is:

1. Admission is paid immediately inside entrance door.
2. Bather proceeds to dressing rooms where he obtains empty tote basket.
3. Bather undresses, dons bathing apparel, checks basket at central storage area and receives check tag.
4. Bather returns to dressing area and enters pool through shower room. Access to pool except through showers is prevented by turnstile.
5. After shower, bather must pass through foot bath and by the pool supervisor's office for inspection.

The traffic pattern forces bathers temporarily leaving the pool to re-enter through the showers and foot bath and by the inspection point.

During slack periods, the admissions function can be transferred to the central storage area, eliminating the need of maintaining an admissions clerk.

Screened openings over each dressing room provide "outdoor" ventilation and sunlight aided by top and bottom wall louvers running the full length of each dressing and shower room. Public rest rooms accessible from the outside are also provided in the bathhouse.

Generator

The treatment building contains a 1,000,000 BTU per hour Orr and Sembower oil-fired hot-water generator. Water at 200° F. circulates from the generator to a heat exchanger in a 2,000-gallon hot water storage tank suspended over the generator. Water from the storage tank continuously circulates through the shower water plumbing system, and the system is controlled to maintain 110° F. water at the shower heads.

Special bathhouse storage and housekeeping facilities include janitor's closet with slop sink in each dressing room and a locked storage area for supplies and minor equipment. The dressing rooms, together with the treatment building storage area, provide ample space for off-season storage of ladders, life guard stands, ropes, diving boards and similar accessories.

Water Treatment

The water treatment recirculation system has a capacity of 1,800 gpm. This handles the following turnover period in the various pools:

Pool	Volume, Gallons	Turnover, Hours
Main Pool & Diving Area	600,000	6
Instruction Pool	29,000	6
Wading Pool	3,400	1

The higher turnover rate in the wading pool compensates for rapid chlorine loss in this shallow water and inherently greater sanitary load on this pool.

Water returns from pool-outlet grates by gravity to a wet well in the treatment building. Vertical screens provide hair, lint and debris screening at the entrance to the wet well. An overhead hoist and tram rail system aids in withdrawing the screens and transporting them to an adjacent washing sump.

Two 900-gpm Peerless vertical turbine pumps circulate water from the wet well through the filtration system to the pool return system. A 4-inch float-controlled filling line from the city water system discharges to the wet well.

Filtration and Chlorination

Three 48-inch diameter, 225-square-foot Separmatic pressure diatomite filters form the heart of the filtration system. Each contains 73 37-inch long plastic-core, orlon-covered elements operating at a rate of 2.67 gpm per square foot at 1,800 gpm recirculation rate. Precoat and continuous-body feed facilities are included in the filtration system. Filter heads and elements can be easily removed for inspection or servicing, and lay-down space is provided immediately adjacent to the filters and in the general storage area, both points being covered by the tram rail system.

A 100-pound-per-day Wallace and Tiernan chlorinator, located in a completely isolated room accessible only from outside the treatment building, provides disinfection. Mechanical ventilation provides air turnover in 3 minutes. The fan starts automatically whenever the room is entered. Scales with platform recessed flush with the floor provide accurate chlorine-use record.

Separate return headers, each equipped with an orifice-actuated indicating flow meter and butterfly flow control valve insure set recirculation rate to each pool even with variation in water level between the pools.

Filtered water returns to the main pool through 70 adjustable opening inlets spaced peripherally around the pool approximately 18 inches below the water surface. Eighteen similar inlets are provided for the instruction pool and 10 inlets for the wading pool.

The treatment building is single-storied but has two floor levels. The area housing the filters, their accessories and the shower water heating and storage equipment is depressed, providing service headroom without increasing superstructure height and simplifying access to the pipe gallery. The balance of the building floor is at grade, providing conveniently accessible storage area for diatomaceous earth, chlorine, portable pool equipment and supplies. The filter-body feed and precoat tanks are arranged so their tops are at storage floor level and can be conveniently charged.

Pool Enclosure

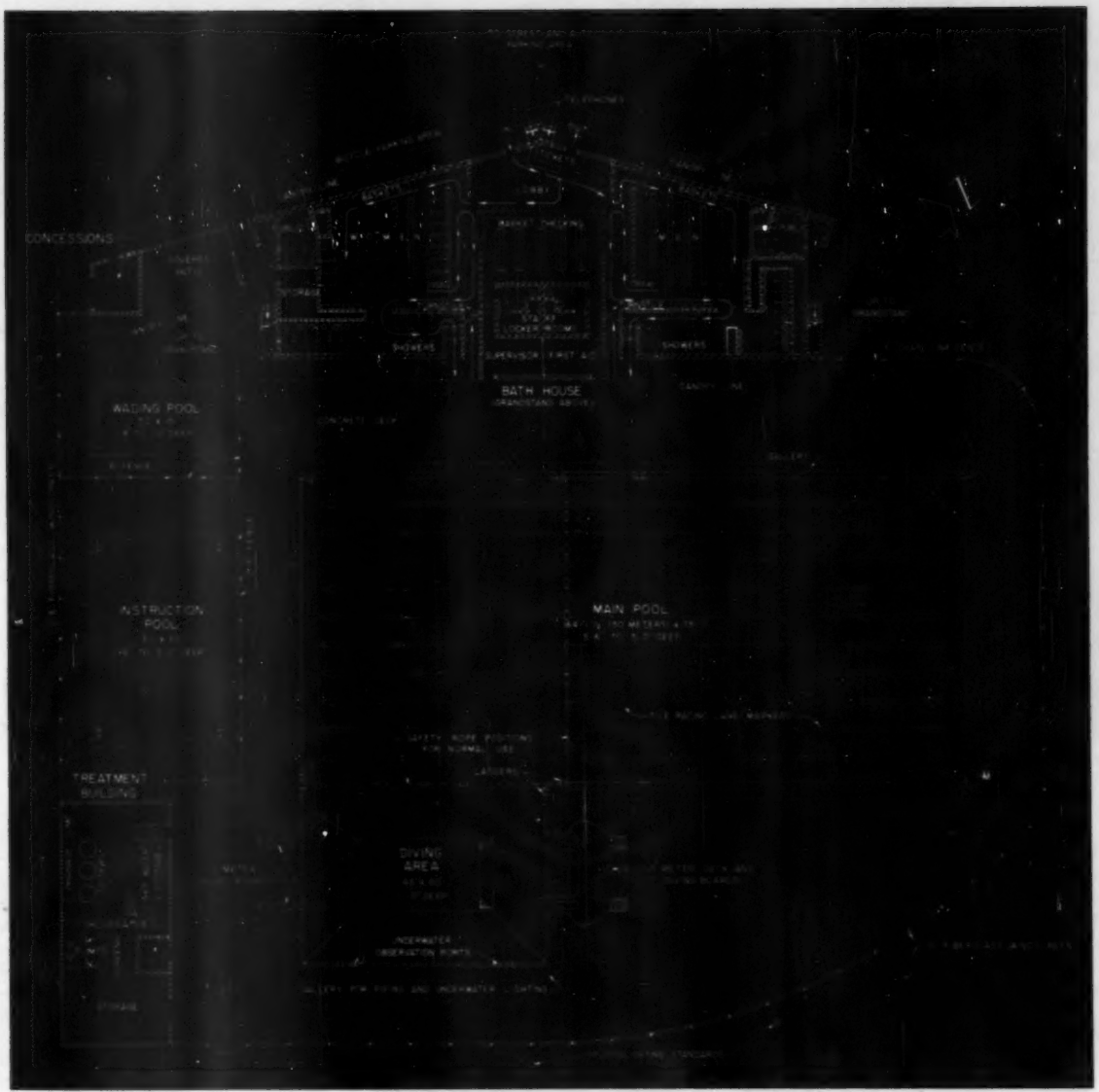
An apparent site disadvantage—the cooling effect of night lake breezes—led to the adoption of an unusual type of pool enclosure.

Solid, 6-foot high, corrugated Fiberglas fencing, supported on structural steel posts and girts, was used in all except small observation spaces near the bathhouse. This enclosure serves as an effective windbreak, eliminating the cooling effect of the breeze; and its cool green color lends a decorative effect to the project. Similar material in cream color provides semiprivacy around the wading pool patio space.

The Fiberglas enclosure results in easier area policing than customary chain-link fencing, since papers, leaves and debris are positively prevented from blowing into the enclosure and do not become lodged in the fence where they are unsightly and difficult to remove.

Color and Lighting

Full advantage of color was taken to achieve an atmosphere in harmony with the nature of the project. The large areas of watergreen, opalescent Fiberglas in the windbreak and canopy and the harmonizing buff-colored brick of the bathhouse and treatment building provide the color theme. Splashes of orange provided by baked-enamel finished steel



Plan view of Menasha, Wis. swimming pool facilities.

panels at the bathhouse front entrance and by matching orange-painted exterior doors, steelwork and lighting standards heighten color interest.

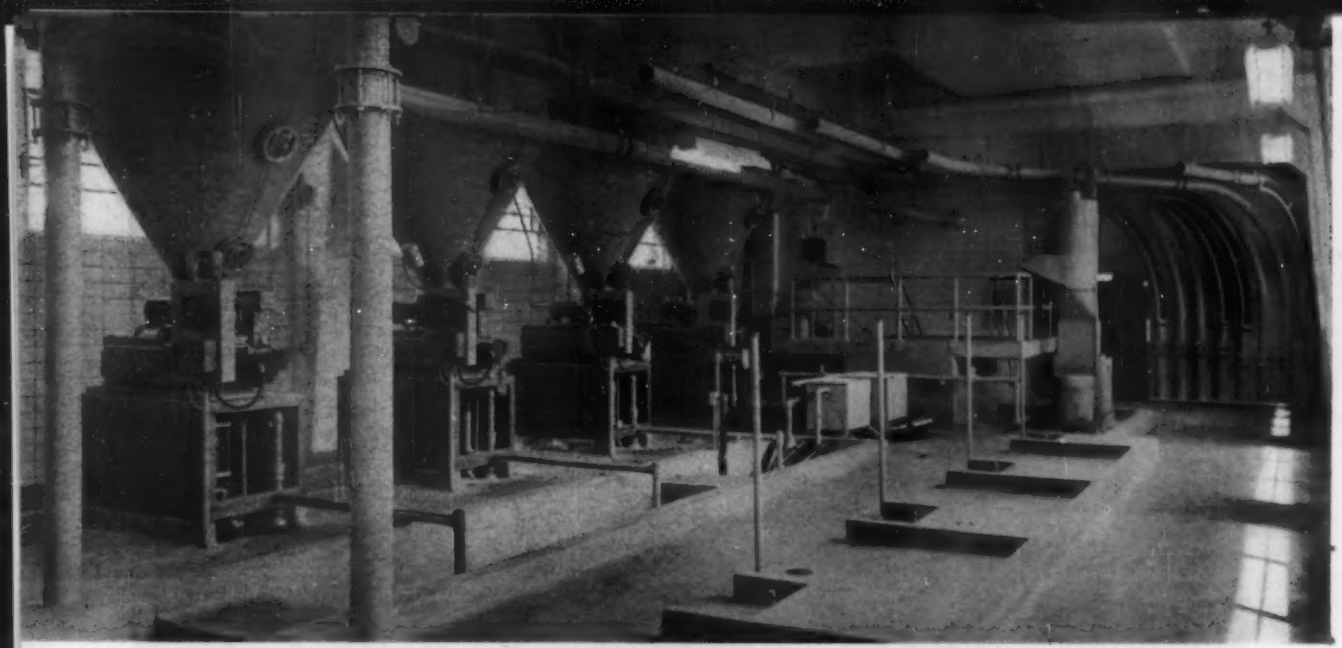
Underwater surfaces of the pools are pale blue. Darker blue is used for surfaces from just below the water line over the wall tops thus providing striking effect and serving to warn persons approaching the pools by the sharp contrast between the grey concrete deck and the bright blue edge around the pools. Inertol swimming pool enamel was used on all concrete surfaces.

Double-unit, 1,500-watt, wide-beam floodlamps mounted on 25-foot steel poles on three sides of the enclosure and a single-unit, 1,500-watt, wide-beam floodlamp mounted under the Fiberglas grandstand canopy light the pool enclosure. Thirty-nine 1,000-watt underwater lights with Crouse-Hinds fixtures around the pool provide striking night lighting and are a great aid to pool safety by maintaining visibility of underwater swimmers to the lifeguards.

The main lighting system provides one watt per square foot of overhead floodlighting supplemented by 2.6 watts per square foot of underwater lighting in the main pool and diving area. Local supplemental lighting, such as under the bathhouse roof overhangs, at entrances and in the patio, provide added lighting where required in the interest of safety and space use. Lighting is controlled from the supervisor's office.

Lake flies, which occur a few nights each summer swarm to any bright light source near the lake. They are short-lived, and dead flies rapidly accumulate on the ground or surfaces beneath the lights. Usual fixture spacing would have caused dead flies to fall on the pool surface where they would be a very serious nuisance. The condition was recognized in the design, and all floodlighting was kept at least 25 feet from the edge of the pools. This separation permits the dead flies to accumulate on the deck or on the

(Continued on page 159)



The chemical feeder room at St. Cloud, Minn. water plant. Four gravimetric and two volumetric feeders add alum, lime soda ash and activated carbon to raw water. Bases at right can accommodate additional machines when the need arises.

St. Cloud Water Plant Engineered

Community vision and modern engineering results in plant designed to meet today's needs and tomorrow's demands

By FRED G. THIELMAN
Water Works Superintendent
St. Cloud, Minn.

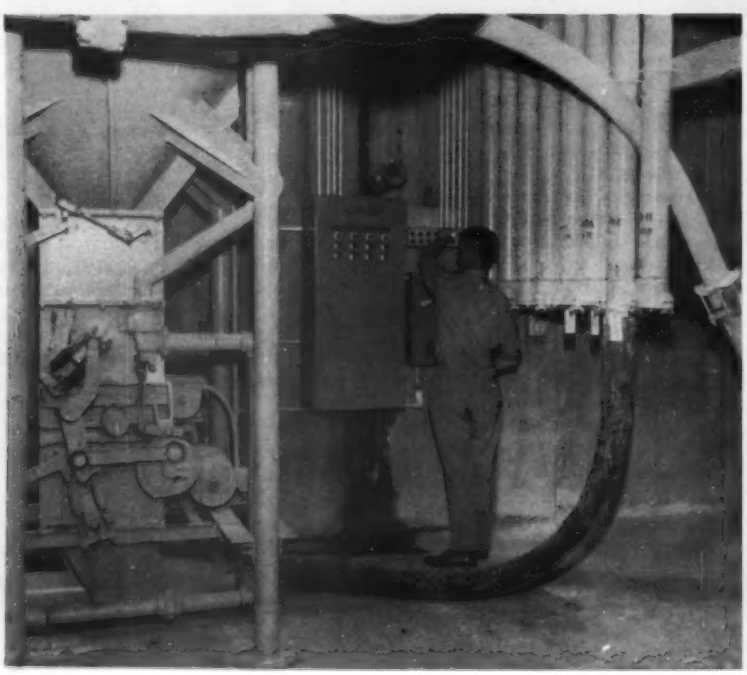
and

SIDNEY L. ZEID, *Associate*
Consoer, Townsend & Associates
Chicago, Ill.

ONE man can operate our complex new water plant without difficulty, thanks to the remarkable advantages of electronic and automatic instruments and devices. Actually, its entire operation, including all related services, is manned 24 hours a day by a staff of only nine men. Modern "automation" is fully at work for St. Cloud, Minn. citizens.

This plant had its beginning on Monday, June 7, 1954, when the voters of St. Cloud, by a notable majority, approved the issuance of bonds to finance an entirely new facility. Ground was broken in October 1955, and the new plant began service two years later, in June 1957. The 9.0-mgd, $1,800,000 facility replaces a 30-year-old plant considered obsolete and no longer adequate to meet the needs of the community. The overall design permits ready expansion in the future when the need arises.

The raw water intake station occupies a site at the Mississippi River's edge just across the street from the treatment plant. An open concrete



Pneumatic transfer equipment moves dry chemicals from trucks to storage hoppers and also from the hoppers to the feeders.

These pumps transfer water from the Mississippi River to the new water treatment plant for conversion to a safe and potable product for citizens.

Pipe tunnel, approximately 200 feet long, houses 26-inch overhead line carrying settled water to the filters, and two 18-inch lines connecting the filters with the clearwell.

for Automation

flume, extending 45 feet into the river at a depth of 15 feet, conveys the water by gravity to the approximately 20-foot square stilling well. A bar screen and a Chain Belt traveling screen, automatically controlled to clear itself when plugged with river flotsam, prevents debris from entering the station.

Pump Ratings

Five Layne pumps driven by General Electric motors pump the water through a 24-inch line to the treatment plant. Pump ratings are: two at 1,050 gpm, two at 2,100 gpm, and one at 3,150 gpm, all against a 50-foot head. They have a total capacity of 13.5 mgd.

Dry chemicals are added to the water just ahead of the rapid-mix basins. These include activated carbon for taste and odor control, lime and soda ash to soften the water from about 15 grains to 5 grains of hardness per gallon, and alum to coagulate and settle out foreign particles.

The chemical feeder room houses six Wallace & Tiernan feeders, four Merchen gravimetric type and two volumetric type. Three of the gravimetric machines feed alum, lime, and soda ash directly into the raw water flume. The fourth unit feeds alum into a splitter-box for diversion to either one or both of the secondary rapid mixers. The volumetric feeders can feed activated carbon to the raw water flume, secondary rapid mixers or settled water line to the filters.

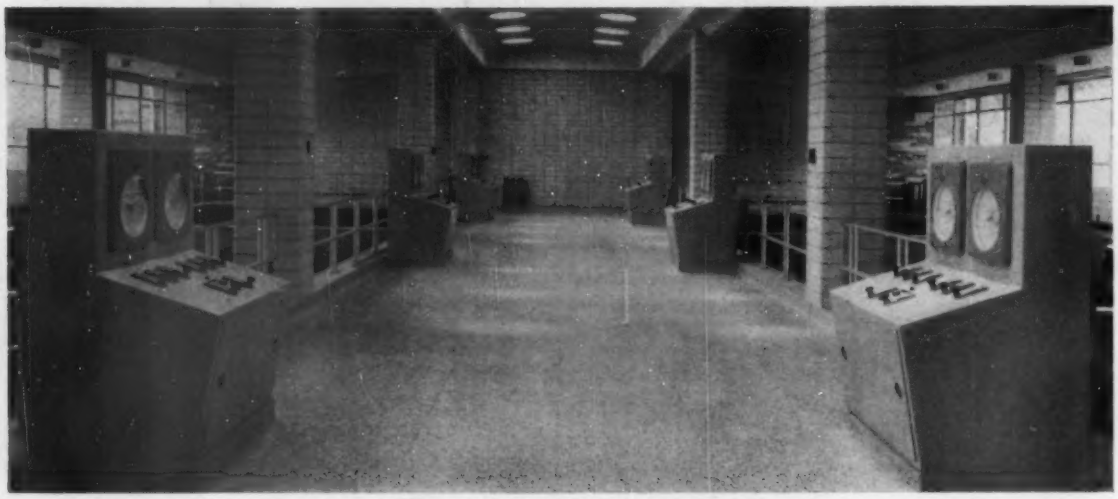
Eight storage hoppers of 25,000-pound capacity each are located at grade level and store alum and lime. A Dracco pneumatic conveyor system transfers chemicals from the delivery trucks to the storage hoppers and from the hoppers to the feeders, saving hours of labor.

After the addition of dry chemicals the water passes through two rapid-mix tanks into two flocculation basins and then into the clarification basins. These are equipped with Dorr clarifier mechanisms. The clarification basin effluent then flows through the recarbonation basins into the secondary rapid-mix tanks, through the secondary flocculators and finally to the settling basins. Effluent from the settling basins then goes to the filters.

Basins

Mixing, flocculation, clarification and settling basins are arranged in two sets so that each set may operate independently as shown in the flow

Modern in every respect, the new water treatment plant is the result of community vision and the latest in engineering.



Six filters provide a total capacity of 9.0 mgd. The overhead plastic domes allow daylight to flood the filter room.

chart. Approximate basin sizes are shown in Table 1.

Other chemicals added during flocculation and sedimentation include chlorine and ammonia. Fluoride is added between the settling basins and the filters.

The chlorine room contains three chlorinators, an evaporator and two residual recorders, all Wallace & Tiernan equipment. W&T also supplied the fluoride feeder and the two ammoniators located in separate rooms.

A manifold allows application of chlorine at four different phases of treatment. We can chlorinate raw water entering the plant, as it enters the secondary flocculators, in the lines carrying filtered water to the clear well and also as it leaves the clear well. Most of our treatment takes place at the secondary flocculators.

One of the residual recorders analyzes a settled water sample for free residual chlorine while the other recorder analyzes and records the total residual of the water leaving the plant. When these recorded residuals are outside the limits set on the instruments, an alarm sounds, notifying the operator that chlorine requirements have changed necessitating an adjustment in chlorine dosage.

All of the chemical feeders operate on an automatic flow proportioning system. That is, once the proper dosages have been established and the various feeders set accordingly, the output of the feeders will change automatically with the rate of flow through the plant, maintaining the originally set dosage per given unit or quantity of water.

Filtration

Six filters, each 23½ feet x 22 feet, provide a total filter area of 3,102 square feet. At the standard 2.0 gpm per square foot, we have a capacity of approximately 9.0 mgd. All have Leopold bottoms. However, only five contain graded gravel and sand as filter media. For experimental purpose we used anthrafilt as the media in the sixth unit. This is finely ground anthracite coal. To date, it has given good results.

The Bailey control consoles and instruments regulate the filter operation and record, on 24-hour charts, the rate of flow, the loss of head, and the rate of backwash flow. The rate of flow positioner, operating on a signal proportional to flow, is so designed as to give an accurate rate regardless of head loss.

Backwash water is discharged to the river. The filtered water flows through two 18-inch pipes to the plant clear well. This El-shaped tank is about 188 feet long x 52 feet wide, with a 22-foot x 40-foot projection on one end. An overflow to the river is set at 12 feet from the tank bottom. Total capacity is 900,000 gallons. Water from the filters enters the clear well at the end opposite from the high service pump suction lines.

The pump room contains five Layne vertical turbine pumps powered with General Electric motors. Pump No. 1 is a 100-hp, 4,650-gpm unit that transfers water from the clearwell to a 750,000-gallon washwater reservoir located in back of the plant. The other four units are used for high service pumping. They are rated as follows, all against a head of 230 feet; one 75 hp, 1,050 gpm; one 150 hp, 2,100 gpm; and two 250 hp, 3,150 gpm. All take suction directly from the clearwell and are operated remotely from the control panel. Two 18-inch transmission lines, connected to the pumps by a single manifold, carry the finished water to the distribution system.

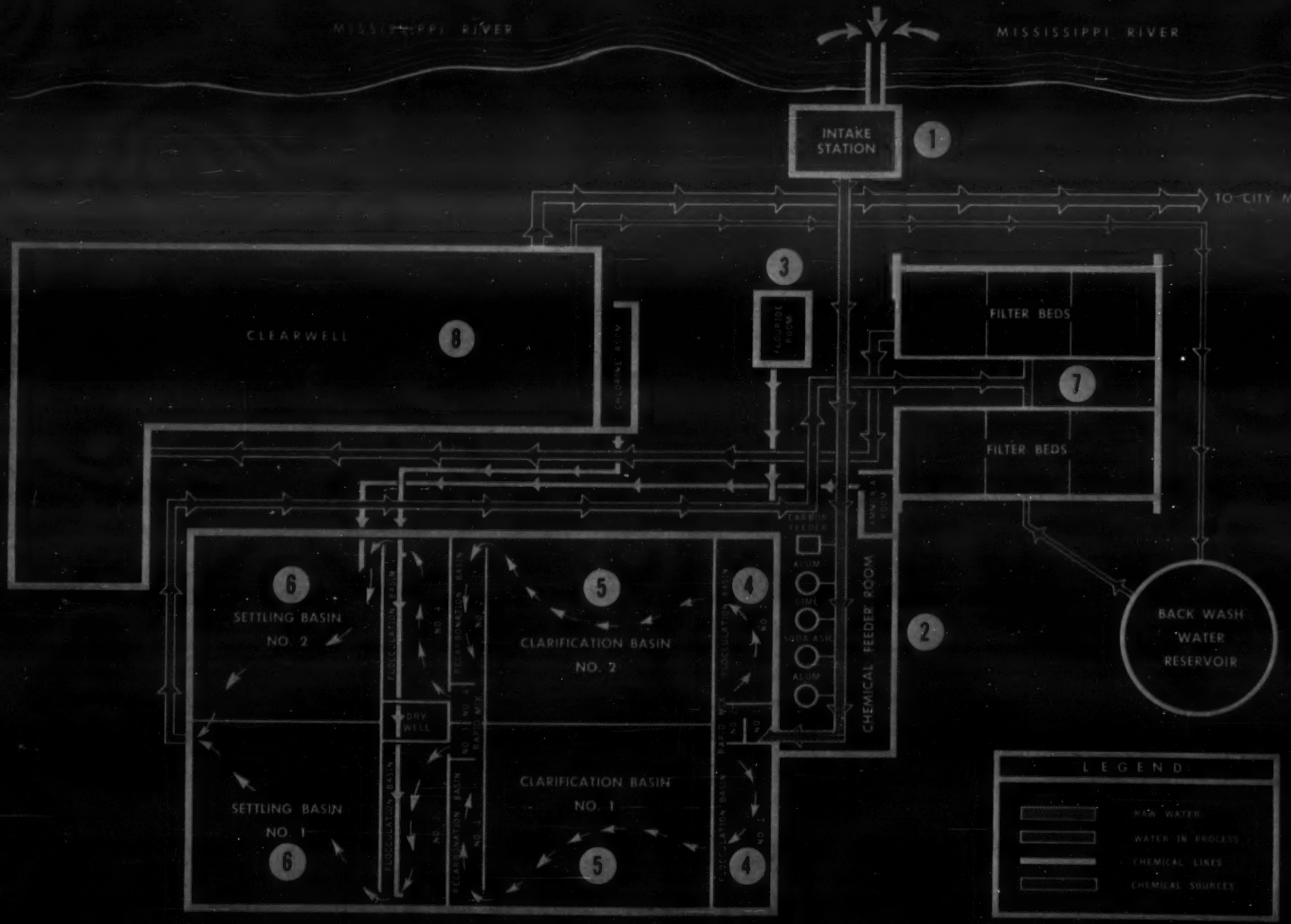
Table I — Basin and Tank Dimensions

Basin or Tank	Side Dimensions	Depth
Primary Rapid Mix	8 1/2 feet x 8 1/2 feet	15 feet
Primary Flocculation	18 feet x 50 1/3 feet	15 feet
Clarification	55 feet x 55 feet	15 feet
Secondary Rapid Mix	10 feet x 10 feet	14 3/4 feet
Secondary Flocculation	18 feet x 50 feet	14 2/3 feet
Settling	70 feet x 55 feet	14 2/3 feet

Master Control Panel

The master control panel ties together the many electronic instruments and devices to provide almost complete automatic operation—and automation with respect to certain operations such as the adjustment of chemical feed to flow changes.

Westinghouse supplied the panel and controls. Indicating lights show


MISSISSIPPI RIVER
MISSISSIPPI RIVER
INTAKE STATION
1
TO CITY MAINS
3
FLUORIDE ROOM
CLEARWELL
8
CHLORINE ROOM
FILTER BEDS
7
FILTER BEDS
FARRIER FEEDER
ALUM
LIME
SODA ASH
ALUM
CHEMICAL FEEDER ROOM
2
BACK WASH WATER RESERVOIR
6
SETTLING BASIN NO. 2
FLOCCULATION BASIN NO. 4
SEDIMENTATION BASIN NO. 4
5
CLARIFICATION BASIN NO. 2
4
RAPID MIX BASIN NO. 2
FLOCCULATION BASIN NO. 2
DRY WELL
SETTLING BASIN NO. 1
6
FLOCCULATION BASIN NO. 3
SEDIMENTATION BASIN NO. 3
CLARIFICATION BASIN NO. 1
5
RAPID MIX BASIN NO. 1
FLOCCULATION BASIN NO. 1
4
LEGEND
RAW WATER
WATER IN PROCESS
CHEMICAL LINES
CHEMICAL SOURCES

what part of the treatment process is operating at any given time and alarms and lights indicate a malfunction in any phase of the operation. Bailey recorders tell the operator what is taking place at critical stages in the treatment process and one recorder sends the signal necessary for the operation of all chemical feeders in the plant.

This system makes our operation as automatic as we desire at this time. When we wish to step up production we merely start another raw water pump and our chemical feeders automatically compensate for the increased flow. At present we manually adjust the filters and start additional high service pumps as needed, but these operations will also be made automatic as soon as we arrive at a little more operating data.

Pipelines

The plant contains numerous features that help in making it one of the finest in the country. Pipelines throughout the plant are equipped with De Zurik Easy-Operating plug valves and Bailey pneumatic positioners. These can be opened or closed with the utmost sensitivity through automatic mechanisms. Both the pipe gallery and chemical storage area are dehumidified by a Kathabar unit capable of drying about 5,000 cubic feet of air per minute. This completely eliminates a universal gripe about moisture in critical areas. Last summer when the outside was

Chlorine residual recorders constantly analyze water after settling and as it leaves the plant. Alarms notify operator of chlorine residual's outside set limits.

95 degrees and the relative humidity 95%, the temperature and relative humidity in the dehumidified area was 72 degrees and 35% respectively.

We also have equipment to aid in the disposal of sludge from the clarifying basins. Two Marlow simplex sludge pumps transfer sludge from the clarifiers to a holding tank. From here it flows to a Bird centrifuge at a constant rate and head. The dewatered sludge is then carried away by trucks for disposal elsewhere.

With the exception of the raw water pump station and wash-water reservoir, the entire facility is housed in a well-planned handsome structure measuring 349 feet by 178 feet, with about half of the volume below grade. The exposed exterior is faced in local granite, and the interior reflects the ultimate in efficient design and modern equipment.

Additional Features

In addition to the facilities already described, it contains a well-equipped laboratory, meter repair shop, and a smartly appointed and arranged superintendent's office. It also includes an operator's office, control center and personnel room equipped with a miniature kitchen. The meter shop contains special storage and inspection racks, tools, work benches and a Ford meter test bench.

Consoer, Townsend & Associates of Chicago designed and supervised construction of the plant with Richard P. Manthey serving as resident engineer. The plant was built under a multiple contract, with Western-Knapp Engineering Co. as the general contractor. Bass Construction had the process piping and mechanical contract, Cold Spring Electric the electrical contract; and a local plumber, Yager Plumbing and Heating, the plumbing and heating contract. The plant was built under the administration of Mayor George Byers and City Engineer Richard W. Teague.

Los Angeles Pinpoints Auto Exhaust As Uncontrolled Air Pollution Source

AUTOMOBILE EXHAUST is the major uncontrolled source of air pollution in Los Angeles, according to the Air Pollution Foundation, San Marino, Calif.

At Stanford Research Institute, the foundation is supporting research with a 520-cubic-foot irradiation chamber on the smog effects, especially eye irritation, of varying amounts and kinds of exhaust, of different cars, of varying irradiation time, and of different fuels. Using a single car operating on one fuel and one set of experimental conditions, it was shown that a range of ratios of hydrocarbons to nitrogen oxides concentration from 2 to 10 produced eye irritation. Further work on different cars, other fuels, and varying residence time, in addition to the concentration ratio of the reactants, is now being conducted. The results from this study will help answer the question: *How much reduction of the objectionable companents of exhaust is necessary to obtain tolerable air?*

At the Los Angeles County Air Pollution Control District, studies showed the eye irritation from irradiated exhaust gases subject to intense sunlight produced from two fuels by an engine mounted on an engine dynamometer. This showed that irradiated exhaust produced with a premium blend of gasoline was more effective in producing eye irritation than that produced from a reformed gasoline. They also pointed out that the results are not to be interpreted as being applicable to the average vehicle or to all possible variations in engine operation.

The Western Oil and Gas Association sponsored a project at Stanford Research Institute on the relationship between irradiated exhaust, fuel, and two smog effects, namely ozone formation and plant damage. The study utilized three cars and six fuels of widely different composition. It was concluded that essentially similar ozone-forming abilities and plant-damaging abilities were demonstrated with diluted exhaust samples from the six fuels.

Annual or semi-annual auto inspection, the foundation finds, is the cheapest part of the control. The cost of a control method would probably be in the range of $50 to $85 per year.

Copies of the complete report, No. 22, may be obtained from the Air Pollution Foundation, 2556 Mission St., San Marino, Calif.

Vanishing Manhole Covers

PRICHARD, ALA. faced a problem that other cities certainly hope won't spread. According to the Alabama League of Municipalities, Prichard officials would start each Monday with manhole covers missing near the schol campus.

City maintenance crews now have anchored the covers in place, making everything serene each Monday.

(Left) Assistant to the city assessor, Robert R. Horacher is checking controls by the 99's printed Simpla-tape, which shows every step in a calculation. Above is Allentown's assessor.

How Allentown

Controls Big Machine Billing Job

By LEO J. FETZER
City Assessor
Allentown, Pa.

TAX billing in Allentown which was simplified in 1954 has been further strengthened by a system of precise controls using calculating equipment.

In this city of 110,000 population, real estate assessment and billing now covers 35,000 parcels, and the per capita tax involves 65,000 persons. For the School District billing, we have to keep an entirely separate record file, since it is smaller than the present geographic extent of the city due to annexations in which the school boundaries did not follow the municipal changes.

For the water and sewer billing, we have 24,000 flat-rate customers, plus 6,000 metered customers and 700 outside the city. Finally, the mercantile license tax involves 3,000 retail and wholesale accounts.

Our Bureau of Tax Assessments and Central Billing prepares bills for all of these departments, and produces accounts receivable for the Treasurer's office, the Water Authority and the School District. This work represents billing for an approximate $8.5 million annual revenue.

Four years ago, when our accounting and billing system was mechanized, we put our real estate accounts under a control system, with each control group representing about 200 properties. At present we have 141 of these controls, giving us 141 chances to catch a billing error, rather than perpetuating the discrepancy throughout an entire billing cycle and having the fantastic job of rechecking a complete set of bills. We assign a three-digit code number to each control to simplify keeping records.

Control Clerk

No checking against controls is done by the accounting machine operators who write the bills. The billing machines accumulate and cross-foot totals, but the operator does not know the control total. Checking this is centralized with a control clerk who keeps a ledger on each control account.

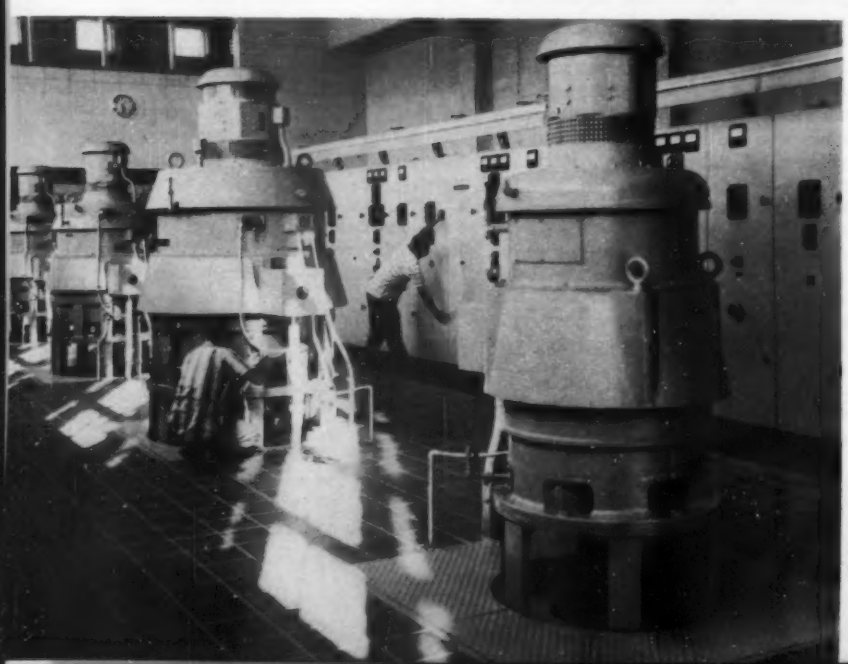
Any rechecking job to locate error is limited to only 300 accounts. We use the Remington Rand 99 printing calculator, with its printed Simpla-tape which provides a fast visual check. This machine has replaced the rotary calculators and adding machines on which we used to depend, and it gives us a better control of accuracy. It also serves not only for a check on our billing operations, but the Treasurer's office can balance its own collections to our control as well.

Our chief meter clerk uses the 99 to ascertain gross charges and water consumption in the master meter book before preparation of bills. It has a 10-key keyboard, which is as simple in operation as an adding machine and can be used for listing and totaling in the course of daily routine work. This obviates the need for separate adders.

Initially, a single bank of four sedimentation basins will serve the plant. Eventually, the plant will have 12 such tanks.

Operations Begin at San Juan's

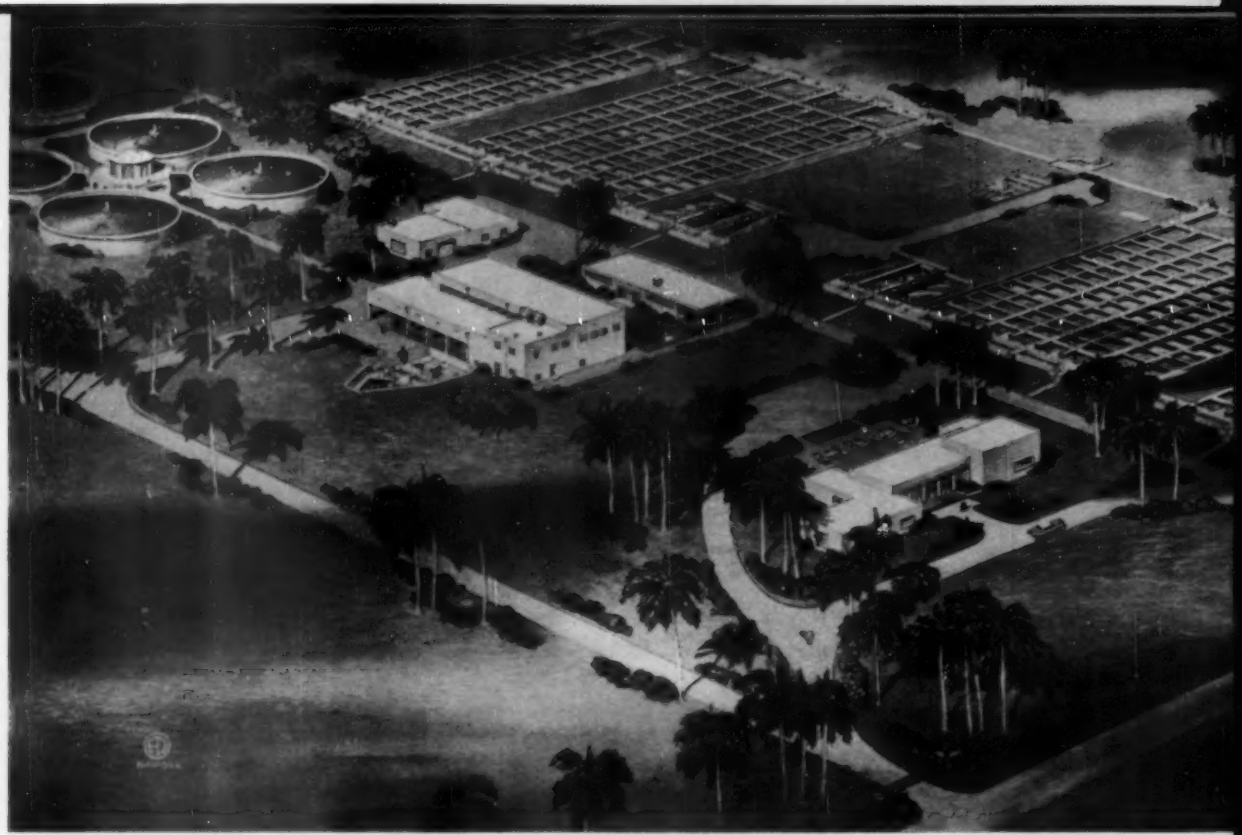
Basic design allows for initial capacity averaging 24 mgd with expansion to ultimate capacity averaging 60 mgd



Pump motors and switchgear occupy the upper level of the main pump room. Eventually five units will be in use.

THE responsibility for sewage collection and treatment throughout Puerto Rico rests with the Puerto Rico Aqueduct and Sewer Authority. This same governmental public service corporation also owns and operates all the public water supplies in the 75 municipalities on the island. It was created in 1945, and since that time has done an admirable job of improving and enormously extending the water and sanitary facilities on the island.

The Authority's first concern was, of necessity, the rehabilitation of the island's public water systems. It was certain that water works alone would for some years tax to the utmost all of the Authority's resources in human effort and money. Nevertheless, the long-standing sewerage problems of the San Juan metropolitan area soon engaged the attention



An architect's rendering of the Puerto Nuevo sewage treatment plant as it will appear when constructed to ultimate capacity.

Puerto Nuevo Sewage Treatment Plant

of the Authority's former executive director, Sergio Cuevas. Early in 1946 the firm of Buck, Seifert and Jost, Consulting Engineers of New York, was commissioned to study the sewerage needs of the area and to formulate a comprehensive, long-range master plan according to which these needs could be realized by stages whenever it would be possible to finance the necessary construction.

Engineers Make Report

The engineers' report was rendered in March of 1948. The master plan recommended in it, and later adopted by the Authority, calls for a comprehensive system of interceptors, trunk sewers and lift stations which will eventually divert most of the sewage from innumerable existing outlets as well as from future systems of lateral sewers in the San Juan Metropolitan Sanitary Sewer District, an area covering about 42 square miles, and bring it to a treatment plant designed to serve nearly 600,000 persons by the year 1975.

By 1952 the Authority found itself in a position to order working drawings to be prepared for the first stages of the project. Construction, initiated in late 1953, proceeded under the Authority's present executive director, Engineer Rafael V. Urrutia. Several contracts were awarded for the construction of main trunk sewers and for the sewage

Numerous ACF plug valves control the flow of sludge through the intricate pipe system in the digester control house.

treatment plant which is the subject of this article. The plant, started in November of 1955, was virtually completed and placed in partial operation in December 1957 with an initial sewage flow of only about 4.0 mgd. However, with completion in 1959 of the principal lift station located at some distance from the plant, the volume of sewage treated is expected to jump to over 15.0 mgd.

The original plan contemplated construction of the initial plant units to handle a flow of 40 mgd and to be designed for subsequent extensions and additions up to a 60-mgd capacity. However, underground conditions, disclosed by comprehensive borings and soil investigation, made it necessary to revise this plan. These conditions were found to be such as to make future extensions to certain structures extremely difficult, hazardous, and expensive. Thus, some structures, especially the buildings, were built large enough to house all equipment needed for a 60-mgd plant, while other structures were so laid out that additional units would be sufficiently separated from one another to enable their construction without endangering the existing ones. This is particularly so in the case of the settling tanks and digesters.

This is a view of the lower level of the main pump room, showing pumps and the arrangement of piping and Darling valves.

Preparing the Site

Before work on any structure could start, the site had to be stabilized by building it up about 5 feet with two 2½-foot layers of selected and compacted earth. To prevent the possibility of mud waves and other disturbances, the bottom layer extends about 50 feet beyond the top layer. All plant structures rest on piles, some of which are 65 feet long.

The site preparation and soil stabilization work was completed in 1953 under a contract awarded to Blythe-Mills Co. Its cost came to slightly over $216,000. The plant area comprises approximately 37 acres, with about two-thirds of this area stabilized and utilized. The balance of the area can be used for secondary treatment structures should they be needed at some future date.

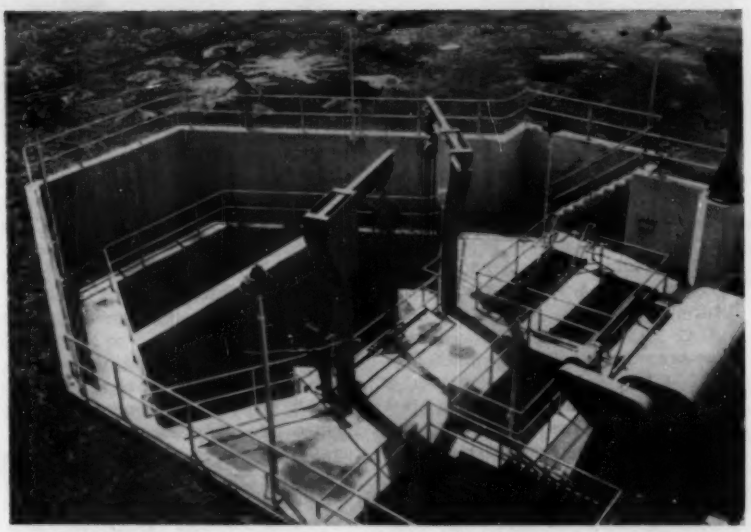
Plant facilities consist chiefly of a screen chamber, raw sewage pump house, grit-removal tanks, settling tanks, effluent-control structure, sludge digesters and field beds for

Left:
The control house contains all equipment for the four 70-foot diameter digesters that surround it.

Right:
This well-equipped and adequately staffed control laboratory is housed in the administration building.

sludge and outfall sewer. The screen chamber, built to ultimate capacity, contains three channels. Each channel is 9 feet wide, about 36 feet long and has a maximum water depth of 6 feet. Initial equipment includes one mechanically cleaned bar screen, 9 feet wide with 1-inch openings and equipped with a Chain Belt Company cleaning mechanism; one hand-cleaned bar screen, 9 feet wide with 1¼-inch openings; and one Chain Belt Company screenings grinder. The third chamber will be equipped with another mechanically cleaned screen at some future date.

Next comes the main pump house. This includes the suction well, dry pump pit with motor room above, chlorinator and chlorine scales room, all housed in a building approximately 96 feet by 62 feet in size.



Present screen chamber equipment includes one hand-cleaned and one mechanically cleaned bar screen. Third channel in the chamber will be equipped when needed.

Existing Equipment

Present equipment includes an Abell-Howe motor-operated overhead crane, four Fairbanks-Morse vertical type centrifugal pumps, and three 6,000 pound capacity Wallace & Tiernan chlorinators. Present pump ratings are one at 10 mgd; two at 20 mgd; and one at 30 mgd. Ultimate equipment will consist of a total of 5 pumps, namely one at 30 mgd; 4 at 50 mgd; and also one additional chlorinator. Chlorine storage space allows for two rows of ton containers, 16 per row. Each of two scales holds 3 of the ton containers.

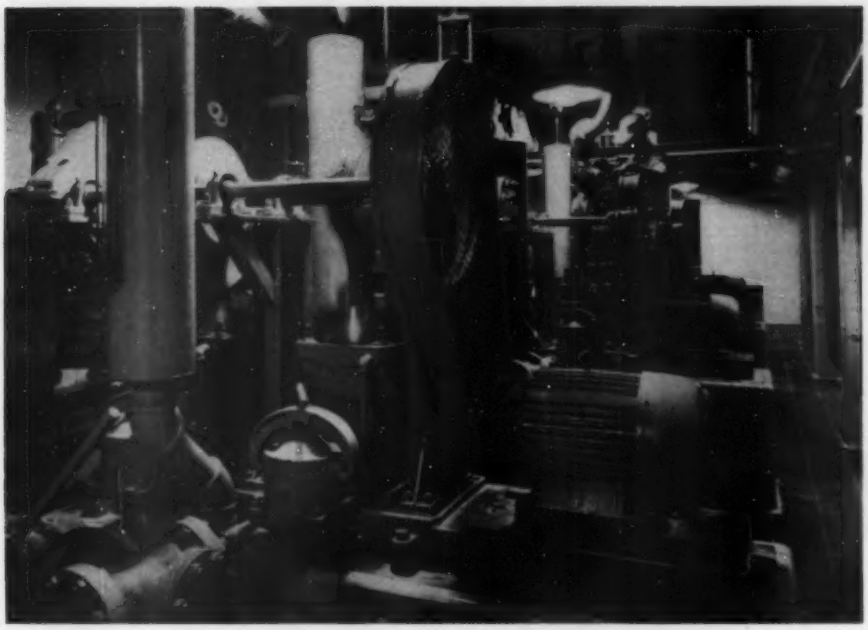
The plant's present grit removal tank lies adjacent to the initial settling tanks. A similar tank will be added later adjacent to the opposite bank of settling tanks—also scheduled for later construction. The tank is 40 feet square and contains Dorr-Oliver grit collecting and washing equipment.

12 Settling Tanks

Final plans call for 12 settling tanks, each 200 feet long by 33 feet wide with an average water depth of 7.92 feet. These will provide about two hours of detention time and a surface loading of 760 gallons per square foot per day at an average sewage flow of 60 mgd. The initial construction includes one bank of four tanks that provide a detention period of slightly over 1½ hours and a surface loading of 910 gallons per square foot per day at an average flow of 24 mgd. All tanks contain Walker Process Equipment Inc., scum and sludge collecting mechanisms with two longitudinal collectors and one cross collector per tank. The tanks are divided into two passes of 16.5 feet width.

Effluent Control

The effluent control structure, built to ultimate size, consists of a main chamber forming the entrance to the



Three 125-gpm sludge pumps are housed in the basement of the sludge pumping station. Space has been provided for a fourth unit.

outfall sewer and a combined pump pit and chlorine contact chamber to handle clarified effluent to be used for nonpotable purposes about the plant. Two 900-gpm and one 250-gpm Peerless turbine type pumps are presently installed to circulate this nonpotable water. An additional 900 gpm pump will be added in the future.

A 72-inch-diameter reinforced-concrete pressure pipeline, approximately 2,500 feet in length, carries the plant effluent to a concrete chamber located about 50 feet short of the established future harbor bulkhead line and some 800 feet out from the present mean sea level shore line. This chamber serves as a temporary outlet and later will be the starting point of a 66-inch subaqueous extension of the outfall through the harbor bulkhead, under the bottom of the projected new ship channel and out into the bay.

Sludge Handling Facilities

A sludge pumping station, about 65 feet by 24 feet in size, houses not only the pumps but includes showers and sanitary facilities for laborers on the first floor. The pumps are in the basement. Pipe tunnels connect this building with the settling tanks and with the control house of the digestion tanks.

Initial equipment includes three 125-gpm Carter duplex sludge pumps and a 48-inch Penn Instrument Division of Burgess-Manning Co. Venturi meter connected to the raw sewage pump discharge pipe. Future installations will include one more sludge pump and another 48-inch venturi meter.

Digestion Facilities

Present digestion facilities include four 70-foot diameter digesters built around and connected to a 40-foot square control house. Equipment includes four floating covers and two 200-gpm triplex sludge pumps, all by Carter; two Fairbanks-Morse centrifugal sludge pumps having capacities up to 450 gpm, depending on head; two supernatant selectors and two waste gas burners. Ultimately this equipment will be duplicated to bring the plant up to maximum capacity.

Initial sludge disposal facilities consist of four field beds in a remote section of the plant site. Each bed is about 160 feet by 232 feet in size. At some future date the digested sludge will be dewatered on vacuum filters and either incinerated or hauled to low areas.

Administrative Offices

The administration building, built to ultimate size, contains office space for the plant superintendent and his assistant; a conference room, refectory, laboratory; and storage space. The overall size of the building is 112 feet by 46 feet.

In addition, the plant has a shop and truck shelter. Here minor repairs can be made to the equipment. There are four stalls for automotive equipment permanently assigned to the plant.

The Raymond Concrete Pile Co. held the general contract, completed at just over $3,777,000. David Y. Bowman supplied the Westinghouse substation equipment, main switchboard and switchgear, and transformers at a final cost of about $108,000. A $179,000 electrical contract awarded to Louis H. Dexter, Inc. and Electical Construction, Inc., a joint venture, included installation of the Westinghouse equipment plus the furnishing and installing of switchboards, control centers, panel boards, control equipment, and accessories.

The entire plant, exclusive of administrative costs, land, engineering and legal fees, and landscaping still to be done, came to approximately $4,300,000.

Outlay for Sewers

Trunk sewers recently completed, now under construction, or scheduled for construction by 1963 add up to some 40 miles and range from 18 inches to 90 inches in diameter. All told, these trunk sewers, including at least 11 pumping stations, will represent a total outlay of approximately $15,000,000. In addition, work on some $8,000,000 worth of laterals sewers is expected to begin when necessary legislation, now under study, is passed to permit their financing.

In untreated drainage ditches, weeds grow luxuriantly, producing stagnant pools, and promoting growth of mosquito pests.

In contrast, ditches, treated with weed killer, remain open, flow readily, and provide no safe haven for mosquito larvae.

Weed Killer Also Kills Mosquitoes

A ONE-THIRD reduction in the annual mosquito control budget of the ***City of St. Cloud, Fla.*** has resulted from a new program of drainage ditch maintenance.

The city is now in its third year as a test area for the State Mosquito Control Board in cooperation with Osceola County Mosquito Control Director Tom Miller to develop effective and economical methods of ditch maintenance. The city program is under the direction of R. C. McKinney, street commissioner and mosquito control director. With the new ditchbank weed control program St. Cloud has reduced its mosquito dusting work from nine applications to six last summer.

Drains Swampy Areas

This city of 4,000 inhabitants occupies about 4 square miles and has about 43 miles of main ditches along streets running north and south through the town. These ditches drain surface water and rain water from streets and some swampy areas into East Tohopakeliga Lake. Many of the ditches serve new developments where homes are being built at a rate which at times reaches nearly 50 per month.

As the city's street-paving program continues, drainage is being provided by storm sewers and tile drains. But where drainage depends on ditches, there has been a continual problem of keeping vegetation from slowing the water flow and causing silt deposits and clogging. The highest point in town, although 77 feet above sea level, is only a few feet above lake level; so there is not room for much digging and scraping in ditch bottoms without affecting the flow of the water. Furthermore, hand-cleaning takes an almost prohibitive amount of labor, loosens up the soil surface—and, worst of all, is sometimes neglected, due to other more urgent work.

So in 1955 the city turned to the **test program with chemical herbicides.**

The first test area was established on 600 lineal feet of ditch, 5 feet wide. Four pounds of the duPont "Telvar" DW weed killer were applied to this area in 100 gallons of water, and control was effective well into the 1956 season.

As a result, the city set out in 1956 to treat all drainage ditches, and achieved a substantial saving in labor as well as in reducing the mosquito population, thereby cutting the need for insecticide dusting.

The ditch maintenance program now provides for re-checking all ditches every two years, and respraying as needed. A two-man crew operates the sprayer from a pickup truck during the six-week period that spraying is done, and the men are available during the rest of the year to work on tree-trimming, street maintenance, etc.

General Rules

St. Cloud has encountered no serious problems in the use of chemical weed killers. However, there are some general rules which should be observed for best results in such a program.

As with all herbicides, certain precautions are necessary in the use of "Telvar" weed killers, to prevent damage to desirable plants. Special care should be taken to avoid spraying on or near desirable trees or other plants, or in locations where the chemical may be washed or moved into contact with their roots.

To minimize movement of the chemical with water flowing in the ditch, it is essential that it be fixed in the ditch soil by moisture. The chemical should be applied before seasonal rainfall, if possible, when there is little or no water in the ditch, and the soil is still moist. If water from a treated ditch is to be used for irrigation, rainfall should total at least four inches before the ditch is used. Otherwise the ditch should be filled with water and allowed to stand for 72 hours. Then any remaining water should be drained off and wasted before using the ditch for irrigation.

If vegetation is high in a ditch to be treated, it should be mowed and cleared away before treatment is applied.

Reduction in the mosquito population results from the better drainage throughout the season and also from removal of the vegetation which harbors the insects. The savings in total mosquito control expenses from the use of chemical weed control in the first year were enough to buy the chemical, pay for applying it, and still permit a one-third saving in the total budget.

It's only a "gag" shot but an effective means of telling the people how serious the water shortage problem could get unless quick action was taken.

By
ROBERT SHELTON
City Manager
Newport Beach, Calif.

Voters Favor New Reservoir By 35-To-1 Majority

Organized program results in successful campaign to finance much-needed water improvement program

Robert Shelton

EARLY this year Newport Beach started construction of a new reservoir designed to hold some 600 acre-feet of water, or about 40 times the capacity of our present 4,500,000-gallon storage facility. The story behind this program serves as an excellent example of what can be done through an effective publicity and educational campaign. The campaign, conducted entirely by a citizens' advisory committee and volunteers, resulted in a vote that might possibly be a nationwide record—a 35-to-1 majority favoring a $1,780,000 bond issue.

Last year the 21,000 residents of Newport Beach used as much as 6.0 mgd. The city reservoir holds only three-fourths that amount, and when that's gone, we're in trouble, for our supply cannot keep up with peak demands.

About half our water comes from city-owned wells with the other half coming from the Metropolitan Water District. Salt water intrusion in recent years has resulted in a steadily diminishing well supply and our location at the extreme end of the MWD supply line puts us in the position of "taking the leavings" after other cities in nearby areas of Orange County have been supplied.

The MWD supplied the amount of water called for in the contract, but the water was not always available when needed, and when it came, there often was insufficient storage capacity to hold it.

Police, fire, and lifeguard vehicles equipped with loudspeakers notified the public when the water shortage became acute and requested voluntary restrictions. We even placed tank trucks in strategic spots throughout the community for use in case of fire. Other cities on the MWD line cooperated by relying more heavily on their own wells and requesting their citizens to conserve water so that more would reach Newport Beach. Hoag Presbyterian Hospital, which serves the entire Newport Harbor area, was forced to "hoard" water in all available containers for emergency use.

Plans for Relief

The City Council, headed by Mayor Dora O. Hill, had investigated costs of building a reservoir and engaged the services of James M. Montgomery, Consulting Engineer of Pasadena. When the Redwood City firm

of Hahn, Wise and Associates, master planners for the city, estimated the ultimate population would be 90,000 or more, the realization of the need became greater.

Montgomery's survey recommended that a 600 acre-foot reservoir would adequately serve the community in the foreseeable future and estimated its cost together with correction of other deficiencies in the water system at $1,780,000. The matter was turned over to a Citizens Advisory Committee previously formed to plan capital improvements. Although various elected officials worked with the group, the project remained a citizens' concern.

Concerted Effort

The advisory group and Council went into immediate action. They selected James Edwards, Jr., a semi-retired operator of a theatre chain, as chairman of the Citizens' Committee for a Reservoir.. This 100-member committee was made up of men and women from all walks of life and included many of the parent capital-improvements advisory group.

An appeal for funds raised a treasury of some $5,000, and a secretary was hired to handle mail, route questions, and to handle speaker engagements and general administration.

The committee organized a three-phase program: (1) inform the voters of the problem and explain how it can be solved by the reservoir project; (2) publicize the bond election; and (3) encourage a "get-out-the-vote" campaign. Action along these lines was as follows:

1. Excellent liaison was arranged not only with the two local papers but with all papers in the area and a qualified newsman was hired to work with the press.

2. Each committee member signed a release permitting the use of his name in connection with pro-reservoir publicity.

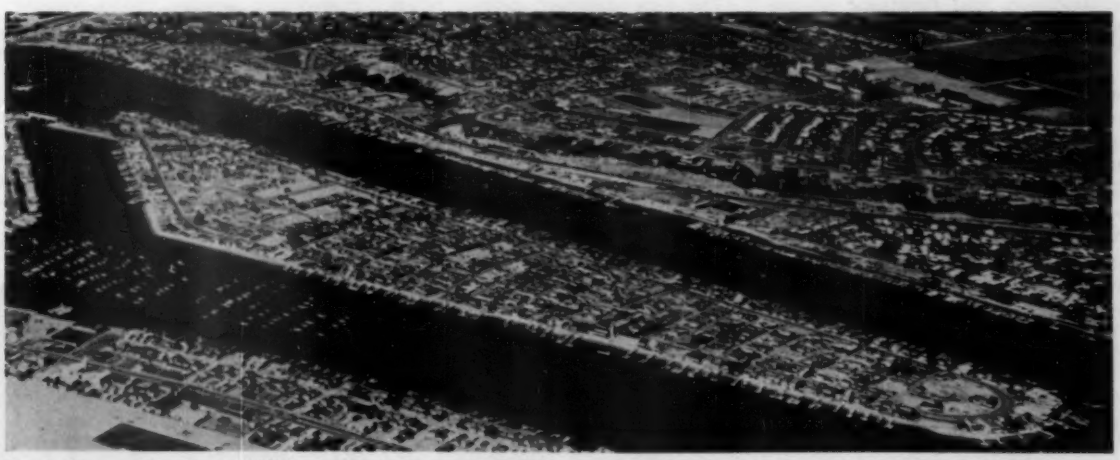
3. Various subcommittees were organized to work on the 'get-out-the-vote' campaign.

4. The story was told to every service and civic organization in the city. An appeal was made for a blanket endorsement.

5. A door-to-door contact program was carried out.

(Left to right) Committee Chairman Edwards, City Clerk Margery Schrouder and the author smile with reason. The vote shows 35-to-1 in favor of reservoir project.

Help came from several quarters. The Newport Harbor Board of Realtors convinced many with facts showing how a poor water supply would adversely affect property values. A strong point was made of the rating given by the Board of Fire Underwriters of the Pacific and



This is Newport Beach, a rapidly growing business and tourist center threatened with strangulation by lack of fresh water.

Area shaded from sun by wooden panel holder

It's only a ditch now but by 1959 this area will be a 600-acre foot reservoir. Inspecting the site are Director of Public Works Bert Webb and City Manager Shelton.

how a good water supply paid out of a slight increase in water rates could materially lower fire insurance rates.

The date of the bond election had been set for May 28; the committee met for the first time on April 26. That meant only one month was available to convince the people to vote for the reservoir. Actually two propositions were involved, and the defeat of either one would doom the project. Proposition 1 called for incurring a bonded indebtedness in the amount of $1,780,000 and proposition 2 would allow the city to accept as a gift some 40 acres of land located in an unincorporated area from the Irvine Co. as the reservoir site. Under the terms of the contract, the Irvine holdings within the reservoir service area would be furnished water at the standard rate.

Gratifying Success

Election day turned up one of the biggest votes in the city's political history. State law required a two-thirds majority, but when the votes were tallied the figures showed a 35-to-1 majority. This was beyond all expectations. Thus, the campaigning and educational program paid off to the city's betterment.

On December 16, 1957 we awarded two contracts for the work. One went to Montgomery Ross Fisher, Inc. of West Los Angeles in the amount of $932,360 for construction of the reservoir and the other, in the amount of $329,935, went to N. P. Van Valkenburgh Co. of El Monte for installation of the pipeline.

These bids gave us further cause for rejoicing, for they total some $300,000 less than the bond issue and estimated cost of the project. Newport Beach citizens are now looking forward to 1959 when plenty of fresh water will again be available.

Trenton's Renewal Program

TRENTON, capital of New Jersey, has received recertification from HHFA for the third year of its workable program for the elimination of slums and blight.

During the past year the city established a Department of City Planning with a director, draftsman, and secretary, which has taken over the organization and functions of the original planning board. It has a budget of $30,000 for 1958.

Revised, up-to-date codes and ordinances have been adopted and a code of enforcement office was set up last October on an experimental basis. In addition to the enforcement officer there are four inspection teams—each including an inspector and a fireman or a policeman—which report excellent cooperation from the police court before which violations are brought. As of today, Trenton has housing, building, plumbing, fire prevention and smoke abatement codes.

The city also reports that all elements of its comprehensive community plan—land use, thoroughfare and community facilities plans, public improvements program, zoning ordinance and subdivision regulations—have been included in its master plan which is serving as a guide in its redevelopment programs. This master plan is said to be particularly helpful in relation to the approach to the neighborhood as a planning unit.

The redevelopment project "Coalport" which ultimately will cause the relocation of more than 400 families, is in demolition stage, and the John Fitch Way Project is in the survey and planning stage. Studies and surveys are moving forward in other selected neighborhood areas, to serve as steps necessary to develop a new overall program of urban renewal, including conservation, rehabilitation, and clearance.

The city and a citizens' group, known as the Greater Trenton Council, are jointly financing a study and plan for Downtown Trenton, which, when completed during the year, is expected to form the blueprint for the complete renewal of the heart of the city. It will involve private and public redevelopment activities, conservation, as well as rehabilitation.

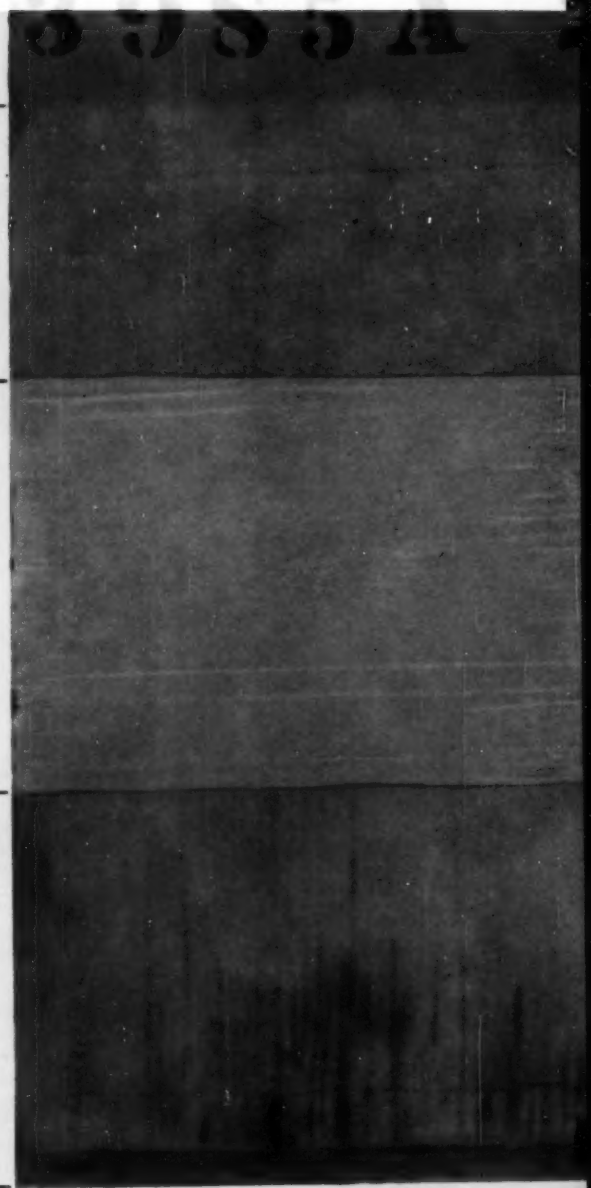
Trenton continues to accept the responsibility for relocating displaced families in its redevelopment projects, and already 238 families from the Coalport area have found new homes. The reports show that 45 families were housed in public housing units, out of 110 referred; 99 moved into private rental housing; and 94 into private sale dwellings.

The report notes that 71 families in this project have purchased housing with the help of Section 221 FHA mortgage insurance assistance. About 97% of the displaced families were nonwhite, and about 20% left the city for homes in the suburbs.

Discussions are now underway with public interest groups to facilitate the development of middle-income housing, and the Trenton Housing Authority has taken steps to gain admission for elderly citizens in low-rent public housing.

Trenton reports, finally, that with the assistance of the Greater Trenton Council, the entire city will be studied.

DONAL J. CONNOLLY
Mayor, Trenton, N. J.


Area shaded from sun by wooden panel holder
Unshaded area
How test paints shown at right were applied
Specification grey finish coat
2 M50 pigment alkyd primer coats
1 M50 pigment alkyd primer coat
Exposed 9 years 45°S
Each coat 1.5 mils

After 9 years exposure, fading has barely begun to show in this 3-mil *M50* primer coat. Same type paint made with standard rust inhibiting pigment chalked and showed rusting in less than half this time.

1.5 mil *M50* primer coat is still in place, still actively resisting corrosion after 9 years. Same type paint made with conventional pigment almost completely disappeared in the same period.

Proof M50 pigment Defense in Depth paints deliver lasting weather resistance

Never before such durable metal protection for highway bridges, guard posts, railings, sign posts. And never before such attractive color choices.

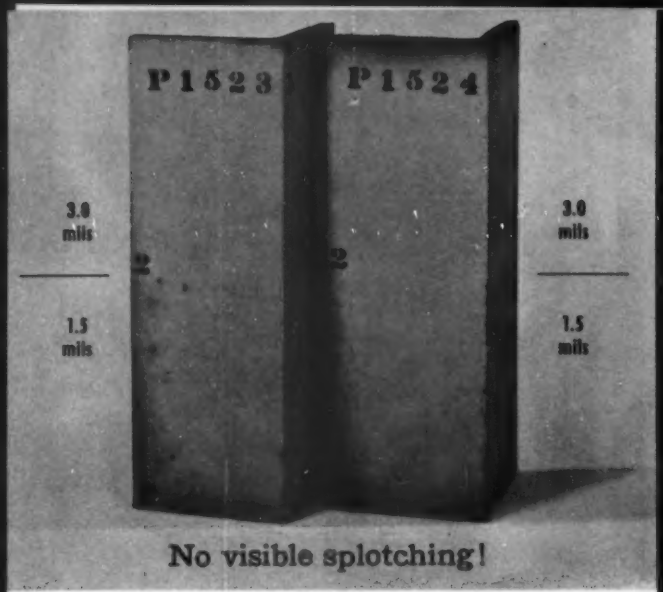
Here you see how typical M50 pigment primer coats weather 9 years exposure. The advantages of weather resistance like this in the primer coat of an anti-corrosive paint system cannot be overstressed. Long after weather has worked its way through intermediate and finish coats, primers made with *M50* basic lead silico chromate pigment* still provide excellent weather protection. Rust inhibiting action in the film continues unchecked. Even breaks in top coats tolerable to damage or painting mishaps do little harm.

The excellent chalk resistance shown by *M50* pigment primers also pays off handsomely. When steel erection is delayed, repreparation of the steel is rarely needed. On-the-job spot priming is sharply reduced.

On the next page, see how typical *M50 finish* paints perform in severe exposure tests.

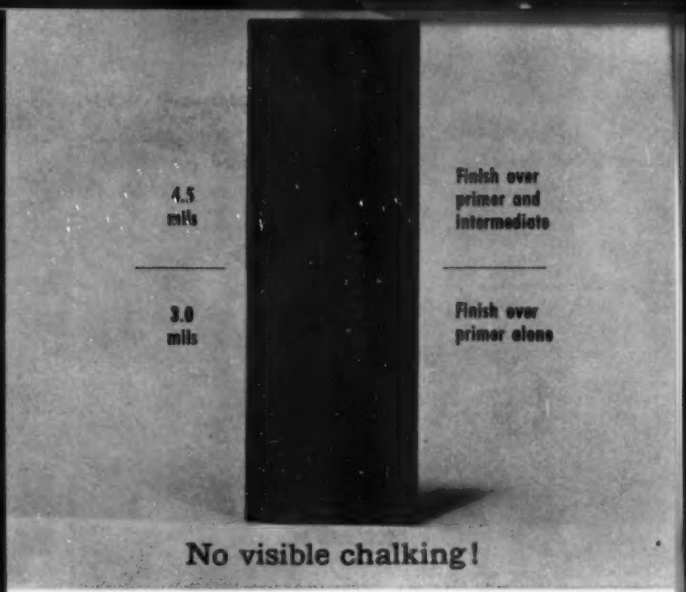
*Registered trademark of

National Lead Company General Offices: 111 Broadway, New York 6, N.Y.



No visible splotching!

Test angles above show how a typical *M50* pigment finish paint applied directly to steel (no primer or intermediate) withstands 4 years exposure in industrial atmospheres. Left, *M50* pigment finish applied on rusted surface with retained mill scale. Right, same paint applied on clean, sand-blasted surface.



No visible chalking!

This test angle demonstrates the excellent resistance to chalking or fading shown by *M50* pigment Defense in Depth paints. Paint has been exposed 2 years, 45°S in normal atmosphere. The insolubility and stability of *M50* fused lead chromate pigment contributes substantially to this performance.

Here are two performance plusses you can expect from M50 anti-corrosive finish paints exposed to weather

With *M50** pigment Defense in Depth paints, *lasting* weather resistance is obtained in *all* coats . . . not just intermediates and finishes. This is clearly brought out by exposure tests such as the ones shown on this and the preceding page.

Along with lasting 3-deep weather resistance, *M50* pigment anti-corrosive paint systems give you 3-deep rust inhibition and 3-deep color choice. Never before has it been possible to produce specification anti-corrosive paints with comparable performances that could be sold at current market levels.

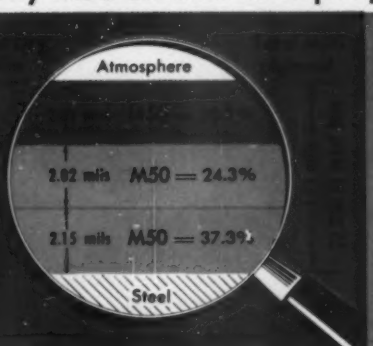
Now, with National Lead's *M50* pigment, most paint makers can make such paints.

National Lead is prepared to help your supplier formulate *M50* pigment paints and also: (1) show you *M50* pigment paint exposure test panels at its Sayville, L. I. Test Station; (2) send you a 24-page descriptive brochure, "Defense in Depth." (Mail coupon below); (3) provide technical aid in test applications; (4) help you develop suitable specifications for paints containing *M50* pigment.

For M50 pigment paints themselves, contact your regular suppliers.

*National Lead Company trademark for a basic lead silico chromate pigment

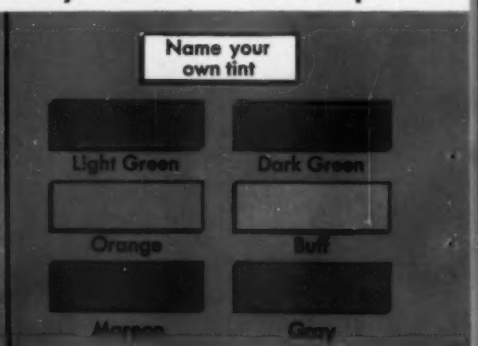
Why M50 Defense in Depth paints give you metal protection beyond all former concepts



In every coat . . . rust inhibition! Fused lead chromate is noted for rust-inhibition. The *M50* pigment particle structure permits paint makers to include large proportions of lead chromate in all coats of anti-corrosive systems.

2 M50 pigment alkyd primer coats
Exposed 9 yrs 45°S
Each coat 1.5 mils dry film
M50 pigment finish put on rusty steel
Exposed 4 yrs 45°S

In every coat . . . weather resistance! *M50* pigment is insoluble in water and has the excellent tint retention properties of fused lead chromate. Unlike other rust inhibitors, it actually boosts weather resistance of paints.



In every coat . . . your choice of colors! *M50* pigment gets along well with most tinting pigments, permits paint makers a wide range of colors . . . not only in intermediates and finishes but in primer coats as well. Colors stay true.

M50 Defense in Depth

National Lead Company,
111 Broadway, New York 6, N. Y.

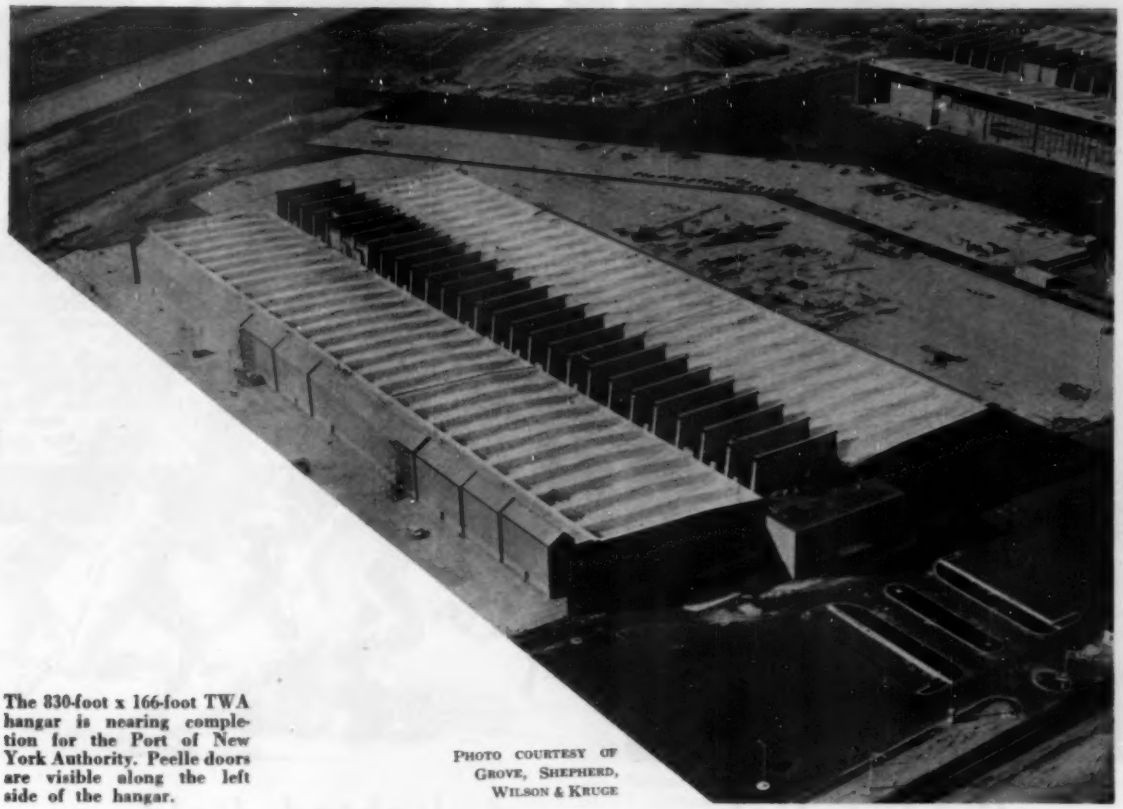
Gentlemen: Please send me your 24-page brochure, "Defense in Depth." Include color card of the six *M50* pigment paints you recommend for steel highway structures.

Name_____ Title_____

Firm or Dept_____

Address_____

City_____ State_____



The 830-foot x 166-foot TWA hangar is nearing completion for the Port of New York Authority. Peelle doors are visible along the left side of the hangar.

PHOTO COURTESY OF GROVE, SHEPHERD, WILSON & KRUGE

Longer Runways and Bigger Hangar Doors

Busy municipal airports study jet transport requirements

IF the evolution of the automobile has been toward greater length and shorter height, that of the airplane has been and is toward greater passenger capacity and faster travel. Today, a number of municipalities face the decision of extending their airport runways to handle jet transport operations.

New York City sees 11,000,000 people—30% from overseas—coming annually to Idlewild, the airport of the air age. Not only has this 655-acre "field" been brought beyond date, but the airline hangars have been remade or built new. The jet branch of the air age has seen to that.

The prototype of the modern giant hangar is the two-year-old Trans World Airlines hangar at Kansas City, Mo. Four others of this center-suspended cantilever design are being built. Two of these are the 830-foot TWA and the 630-foot Pan American World Airways hangars at New York's International Airport, Idlewild. Ammann & Whitney of New York City, are the engineers

The design is thin-shelled concrete cantilevers suspended by cables from anchor walls that span the central core building which houses offices and shops. The hangar space on each side of the core is unobstructed and able to accommodate several airliners.

Doors constitute one of the important features of a modern hangar. They are so large and vital to operation that they almost wag the buildings. These two hangars are equipped with Peelle doors. These slide horizontally to give access to the whole 830-foot length of the TWA hangar. They roll on tracks and can leave two-thirds of the hangar open.

The problems of design had to be matched with boldness on the part of the contractors. Instead of rigid falsework, Grove, Shepherd, Wilson & Kruge used travelers made of laminated timber trusses on eight posts braced by cross beams and steel rods in building the TWA hangar.

The builders of the new planes are Boeing, Lockheed and Douglas. The Boeing and Douglas jets have tail fins 40 feet high, wing spans across 140 feet, and fuselages about 15% longer than piston-engined planes. Civil Aeronautics Administration advises that the dimensions of tail fin heights might require larger hangar doors.

The cities build their own hangars, CAA reminds. No federal aid is allowed on hangars, so the purchase of doors would be strictly a problem of the local contracting authority.

An unlighted field Costs Money...

A lighted field EARNS Money

A sports administrator cannot afford to rely only on The Big Games to make his year's program profitable.

He must go after the bread-and-butter business too: The early and mid-season contests which – when played at night – will attract more customers who "just like to see a good ball game."

When Crouse-Hinds lights the play, there's daytime comfort of viewing for *everyone* – spectators, officials, players and coaches. No squinting from lack of illumination. No squinting because of glare.

Better play, longer practice time, increased school spirit, better attendance . . . these are just a few of the dividends possible with Crouse-Hinds sports floodlighting.

Name the spectator sport . . . name the participator sport: Crouse-Hinds provides durable, high-efficiency floodlighting for all.

Let one of our Lighting Engineers help plan your installations. Just send a map of your stadium, field, court or pool . . . or write us to send a field engineer to your office for consultation. He will show you how better floodlighting *pays its own way!*

Type FLA Sportslight

Meantime, send for our 76-page illustrated Bulletin 2605, "Night Time Is Play Time," describing Crouse-Hinds sports-lighting layouts for 45 indoor and outdoor sports.

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New Parking Meters Installed in Springfield, Ill.

By JOHN E. HARTLEY
City Traffic Engineer
Springfield, Ill.

Art Hammes (left) and W. Lee Rees of Duncan Meter Co. install manual meter heads in Springfield, Ill.

ELEVEN HUNDRED new parking meters have been installed in the downtown section of Springfield, Ill. These Duncan manual Model 60 meters replace an equal number of meters which had been in use from eight to ten years.

The city has approximately 1,900 installed meters, including 750 Park-O-Meters which are still in serviceable condition. The replaced meters were so worn they required almost constant maintenance. The city therefore decided to replace them with a manual type.

The new meters release about 20 man-hours per week, which were previously devoted to winding the 1,100 early model automatic meters in Springfield.

Four years ago, Springfield had 1,932 parking meters installed. About 30 of these were eliminated because they were too far from the center of the downtown section. Investigation proved they were unnecessary to create adequate curb turn-over. Of the new meters, 50 are being held for reserve to replace broken or damaged meters, or to add new ones in unmetered territory.

A study is now being made to determine the feasibility of placing meters around the Illinois State Capitol group of buildings to assist our enforcement officers in making available a larger amount of curb parking for short-time parkers.

More Than Half Were Drunk

MORE than half of the drivers in New York City who were killed instantly, or who died within 24 hours of their accidents in 1957—38 out of 69—were under the influence of alcohol, said Police Commissioner Stephen P. Kennedy of New York City. Medical analysis showed that the 38 had alcohol in their systems in amounts ranging from .10 to .40% (.10% is relevant evidence and .15% or over is prima facie evidence of intoxication under New York State Law). The police commissioner said:

The finding of alcohol in over half of the "killed operators" strongly supports the belief that critical judgment vitally necessary to the operators of a motor vehicle is impaired by the consumption of alcohol.

In 12 accidents involving two-plus alcohol content (0.11% to 0.25%) the technicians of the Accident Investigation Squad listed *Delayed Perception* as the direct cause in six cases, *Speed* in four instances and *Illegal Behavior* in two cases.

In 26 accidents in which operators were found to have three-plus alcohol (0.26% to 0.40%) seven had a direct cause of *Speed*, eight *Delayed Perception*, and one *Illegal Behavior*.

New York City's police commissioner commented as follows:

The relationship between drunken drivers and excessive speed, inability to perceive hazards and poor judgment in selecting the evasive action best suited to avoiding an accident is now

800 BALTIMORE Traffic Signals Electronically Coordinated

ELECTRO-MATIC® PR SYSTEM unplugs traffic bottlenecks

There's something noticeably new in Baltimore — traffic moves, and in orderly fashion, too. In a few short years, Transit-Traffic Commissioner Henry A. Barnes, has turned Baltimore, which had been called "the city with the most antiquated signal system of its size," into a city that boasts the most modern, efficient signal system obtainable.

Baltimore's PR System is an advanced combination of modern electronics. Radar Detectors are used to sample key traffic flows for the centrally located battery of Electro-Matic Masters shown above. The highly developed computing circuits of the Masters analyze this flow data and send to the 800 all-electronic PR Locals throughout the city the necessary instructions to set up the most effective timing pattern for traffic conditions of the moment.

For details write for Bulletin E-224B.

AUTOMATIC SIGNAL DIVISION
EASTERN INDUSTRIES, INC.
NORWALK, CONNECTICUT

apparent. This is not now an assumption but a proved fact. The living motorist can learn from these unfortunate operators.

Commissioner also reports that 4,200—42%—of 10,000 motorists who received summonses for moving traffic violations, were repeaters. A city-wide survey, between October 30, 1957 and January 21, 1958, conducted by members of the Special Traffic Enforcement Squad, disclosed that 2,085 drivers had been summoned and convicted for a previous hazardous moving violation and that 1,100 others had two previous convictions. An additional 569 drivers had been summoned three times previously, and 446 had four or more summonses for the violations which are the 14 prime causes of death, injury and accidents on the highway, as follows:

1. Driving while intoxicated
2. Dangerous driving
3. Speeding
4. Failing to give right of way
5. Failing to stop on signal
6. Improper turn
7. Failing to signal
8. Disobeying sign
9. Defective brakes
10. Failing to keep to right
11. Driving through play street
12. Driving through a one-way street
13. Driving without a license
14. Improper lights

Most of the drivers who had received three or four summonses previously were apprehended violating the traffic laws in their home boroughs. This indicates that the drivers were well aware of the rules, but that their over-familiarity with their home areas developed a disregard for the law.

Electronically Controlled Plant Parking Lot

AN electronically-controlled traffic system designed by Los Angeles County Road Department engineers controls in-and-out vehicular traffic at the Los Angeles headquarters plant of United States Steel's Consolidated Western Steel Division.

Each car leaving the plant parking lot trips a pavement treadle to send an electronic signal to a controller, which controls three sets of signal lights on the four entrance and exit lanes to the parking lot.

The equipment, made by Automatic Signal Division of Eastern Industries, Inc., East Norwalk, Conn., can clear the parking lots in from 5 to 10 minutes, as compared with a 30-minute average clearing time in the past. Approximately 2,500 vehicles will be handled daily. Three sets of 20,000-lumen General Electric electrolier street lights provide safety for drivers arriving and departing on night shifts.

During most of the day, there are two inbound and two outbound lanes for the parking lot. However, when the parking lot is to be emptied, all four lanes are outbound. Note (see picture) that detectors are indicated for all four lanes. All four are connected to Phase C of the controller. During other times of the day, two of the detectors in the lanes associated with the inbound traffic, are disconnected. This is the part of the system that is unique.

PHOTO COURTESY OF U. S. STEEL

Vehicles enter and leave parking lot via new electronically controlled traffic system at Los Angeles headquarters plant of United States Steel's Consolidated Western Steel Division. Designed by Los Angeles County Road Department engineers, the new system enables employees' cars to vacate the parking lot in 5 to 10 minutes, compared with 30 minutes in the past.

Better Fining of Parking Meter Violations

FORMERLY, the ordinance pertaining to traffic administration in Culver City, Calif., provided for a 50c "fee" payable in person to the Office of the City Treasurer. The procedure was legally questionable, antiquated, and not in the best interests of good public relations.

The 50c fee itself was tolerable to the citizens, but the effort involved in paying it was often as costly in time and additional parking fees as the fine. Furthermore, the city treasurer, an elected official, found the duty undesirable. He was the person upon whom the inconvenienced citizenry would vent its wrath, and it was necessary for his staff to devote too much time to handling the function. Finally, follow-up was costly to the city and then only partially fulfilled.

The system was a holdover of the old Municipal Court system. A study of costs indicated that the 50c figure actually resulted in a loss to the city after processing. A reasonable figure was $1, and the judge of the County Court agreed to set this sum as bail. Next, a simplification of the payment procedure was considered. It was decided to use a self-addressed, franked envelope in which a dollar and a copy of the citation could be placed by the violator, mailable at any post office.

The citation was revised to include "Court" language, indicating that the matter was identical in treatment to normal citations, and a courteous reminder was printed

Shape is important

IN A LIGHT STANDARD TOO!

Our octagon shaped design was no accident! We thought about *strength* as well as beauty . . . and comparison tests show the octagon shape to be 12.2% stronger than the round and 39% stronger than the fluted shape.

Our new catalogs on steel and aluminum standards tell about this and other features you will like. We'll be glad to send them free. Just drop us a line. Address: Dept. A5.

KERRIGAN
IRON WORKS, Inc.
NASHVILLE TENNESSEE

Approved by leading architects, engineers, contractors and City, County, State and Federal officials. Installations in over 170 cities and towns.

on the envelope from the Police Department, asking cooperation in the future. The system was adopted by deletion of the collection provision in the existing ordinance, concurrent with the printing of the envelopes and new citations. Citizens complaining about the change were told that the function was now handled by the Court, as are all other judicial functions.

Advantages

The change in procedure will take the loss out of meter violation procedures (the Court will assess $1 bail, followed by other fines if the bail is not met, and the city will recover 90% of the charges); improve public relations by simplifying the bail payment procedure; and take the workload and the pressure off of the elected city treasurer. Also, there is now no question of legality, and the follow-up and recovery will be effective.

JOSEPH M. MITCHELL
Assistant Chief Administrative Officer
Culver City, Calif.

Springfield Gets Mad About Missing the Parking Boat

SPRINGFIELD, Ill. would not have a parking problem today if, from the beginning, each business had provided necessary private areas for its employees and customers. Zoning for parking means that the public will not be required to furnish parking space for such activities as are strictly the owner's responsibility.

In several hundred cities of the United States, zoning over the past ten to 15 years has required that various enterprises furnish at least a minimum share of the needed off-street parking space as an integral part of the enterprise at the time it is built or expanded. The same reasons which make off-street parking desirable also apply to off-street loading and unloading areas. Here again, the zoning ordinance can prevent this source of traffic congestion from appearing in new developments.

Below are pertinent requirements in the Springfield, Ill. zoning ordinance, based on a legislative guide prepared by the Eno Foundation for Highway Traffic Control, Saugatuck, Conn.:

Section 49.15.1 Off-Street parking required.

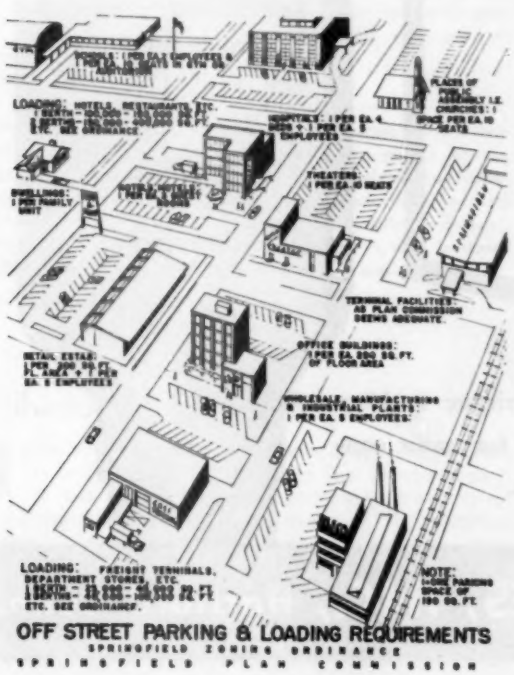
In all area districts except in the central business district bounded by the center lines of Madison, Capitol, Second and Ninth Streets, no building or structure shall be erected, and no extensions, major repairs or substantial alterations shall be made to an existing building or structure, unless . . . provision is made for the location on lot concurrently with such erection or change, off-street parking space on the basis of the accompanying drawing.

Section 49.15.2 Off-Street loading required.

No building or structure shall be erected and no extensions, major repairs or substantial alteration shall be made to an existing building or structure in any area district including central business, unless there already be in existence upon the lot, or unless provision is made for the location on the lot concurrently with such erection or change, off-street loading space on the basis of the following minimum requirements:

1. Every department store, freight terminal, hospital, industrial plant of 25,000 or more shall provide off-street loading spaces.

2. Every auditorium, convention hall, hotel, office building, which has an aggregate floor area of 100,000 square feet or more shall provide loading spaces in accordance with a formula established by the ordinance.


LOADING: HOTELS, RESTAURANTS, ETC.
PLACES OF ASSEMBLY I.E. CHURCHES: 1 SPACE PER EA 10 SEATS
HOSPITALS: 1 PER EA 4 BEDS + 1 PER EA 5 EMPLOYEES
THEATERS: 1 PER EA 10 SEATS
BUILDINGS: 1 PER FAMILY UNIT
TERMINAL FACILITIES AS PLAN COMMISSION DEEMS ADEQUATE.
OFFICE BUILDINGS: 1 PER EA 200 SQ. FT. OF FLOOR AREA
RETAIL ESTAB: 1 PER EA 5 EMPLOYEES
WHOLESALE, MANUFACTURING & INDUSTRIAL PLANTS: 1 PER EA. 5 EMPLOYEES.
LOADING: FREIGHT TERMINALS, DEPARTMENT STORES, ETC.
NOTE:
ETC. SEE ORDINANCE.

OFF STREET PARKING & LOADING REQUIREMENTS
SPRINGFIELD ZONING ORDINANCE
SPRINGFIELD PLAN COMMISSION

Parking Ban Aids Street Cleaning

ALTERNATE-side-of-the-street parking has been extended in the East Bronx area of New York City for an additional 322 square blocks, embracing 103.3 curb miles, to facilitate the mechanical cleaning of streets, says Traffic Commissioner T. T. Wiley and Sanitation Commissioner Paul R. Screvane. It involves relocating 74 bus stops from the near side of intersections to the far side.

Motorists who park in violation of the regulation will be liable to a Police Department summons ($15) and the vehicles will be towed away to a Department of Sanitation car pound. A towing charge of $10 will be imposed plus a charge of $1 a day storage for vehicles towed to the pound, where they may be retrieved on presentation of car registration and driver's license and payment of accumulated fees.

PARKING METER REORDERS OFFER POSITIVE PROOF OF MARK-TIME SATISFACTION

1 CITY REORDERED 21 TIMES*

2 CITIES REORDERED 18 TIMES

1 CITY REORDERED 17 TIMES

1 CITY REORDERED 15 TIMES

1 CITY REORDERED 14 TIMES

1 CITY REORDERED 13 TIMES

1 CITY REORDERED 12 TIMES

6 CITIES REORDERED 11 TIMES

Plus

Hundreds of Reorders

From Others

*Notarized list on request.

THERE MUST BE A REASON!

If you are buying — intend to buy — or influence buying — of PARKING METERS . . . you should know the complete "MARK-TIME" story. Please write for details and descriptive literature.

"MARK-TIME" Hurricane Parking Meter — No. 1 choice for traffic control all over the nation.

MARK-TIME

M. H. RHODES, INC., Hartford, Conn.

Park and Belt It

WOULD a passenger belt conveyor system providing continuous no-waiting transportation actually persuade auto users to leave their cars behind while doing business downtown?

The Goodyear Tire & Rubber Co. and the Stephens-Adamson Mfg. Co. have worked out such a transportation system. On arrival at convenient stations, passengers can step onto a slowly moving belt and from there into on of a continuous series of small cars and ride quickly, quietly and comfortably to their destination.

A "Carveyor" System

An application of this system foresees large parking areas and transit stops on the fringe of the downtown core. These areas would be connected with a "Carveyor" system running through the business section. It would provide passenger distribution at an off-street level with a quality of service unequalled today. The system is described in a brochure entitled, *Is Downtown Traffic Strangling Your City?*, available from The Goodyear Tire & Rubber Co., Akron 16, Ohio.

46,000 Parking Meters in NYC

NEW YORK CITY'S Traffic Commissioner T. T. Wiley estimated that 50,000 shoppers and short-term parkers per week are using 1,748 new parking meters installed in eleven business districts of Manhattan and Brooklyn. This latest expansion of the Traffic Department's on-street parking program brings the total number of parking spaces controlled by meters in the city to 46,000 serving 69,000,000 vehicles per year.

Said Commissioner Wiley:

The Traffic Department's parking meter program offers a two-fold contribution to the economic well being of our citizens. First, meters have sustained the vitality of our neighborhood shopping and commercial districts by providing convenient parking. In turn, this aids in perpetrating job opportunities and resists deterioration of business districts. Meters have also decreased traffic congestion by reducing double parking and cruising.

Milwaukee Safest Big City

TRAFFIC deaths in Milwaukee, Wis. dropped from 74 in 1956 to 42 last year—the best big-city record. It was the lowest traffic death rate achieved by a metropolitan city in the history of the National Safety Council's competition, which started in 1931, according to Dr. B. L. Corbett, managing director of the Milwaukee Safety Commission. There are 20 such cities.

As there were increases in automobile usage, gasoline consumption and registration of automobiles in the greater Milwaukee area, the reduction is ascribed to a sustained program covering all phases of traffic safety and particularly aiming at jaywalking. Enforcement cut pedestrian fatalities from 39 in 1956 to 27 in 1957.

All Departments Cooperate

Mayor Zeidler said that he was extremely gratified with the work of the safety commission, the police department and the city engineer's office in their efforts to reduce traffic deaths, after a disastrous 1956.

Racine, Wis. was third best among cities in the 50-,000-100,000 population class with 0.3 deaths per 10,000 vehicles, the National Safety Council said.

Deaths totaled 38,500 nationally, 3% below 1956's total of 39,628. The mileage death rate—fatalities per 100 million vehicle miles—was 5.9 compared with a previous low of 6.4 in 1954 and 1956.

Not Manslaughter?

I was a competent driver, sure,
Self assured, with intentions pure.
My thoughts may have been of home,
Or pleasures, to which all are prone.

Then something happened, quick as a flash;
I could not stop, he came in a dash.
A sickening thud, I screeched to a halt,
My heartbeat quickened, was this my fault?

He lay there still, a bundle of rags,
A boy about five, my hopes then sagged.
A careless moment, a speed too fast
Had cut off a life, his hopes now passed.

Life dear to him, troubles not known,
Was ne'er to know honor or renown
A mother's love will guide no more,
The footsteps of her boy's decor.

Of blame, police made it quite clear;
No charge was placed, no more to fear.
The speed I used to greet my wife
I never thought would take a life.

Take this tip and reduce your speed
'Twill be your gain if you take heed.
No price is on those seconds saved,
But life, most dear, can't be repaid.

Grant me a steady hand and watchful eye,
That none shall be hurt when I pass by.
Suffer those who share the road with me
Golden Rule Safety as taught by Thee.

Teach me to use my car for others' need,
Nor miss through love of speed
The beauty of Thy world; that thus I may
With care and Safety, serve Thy way.

Elmer Wolf
Formerly Mayor
Cuyahoga Falls, Ohio

In New Orleans...

Attractive MONOTUBE LIGHTING POLES

for the unique Airline Highway Interchange

For exceptional appearance, design choice, maximum life and maintenance economy, specify Union Metal MONOTUBE lighting poles.

Steel or aluminum . . . round or fluted . . . davit or bracket type design . . . anchor or transformer base . . . Union Metal's half-century of lighting pole manufacturing experience is your guarantee of complete satisfaction.

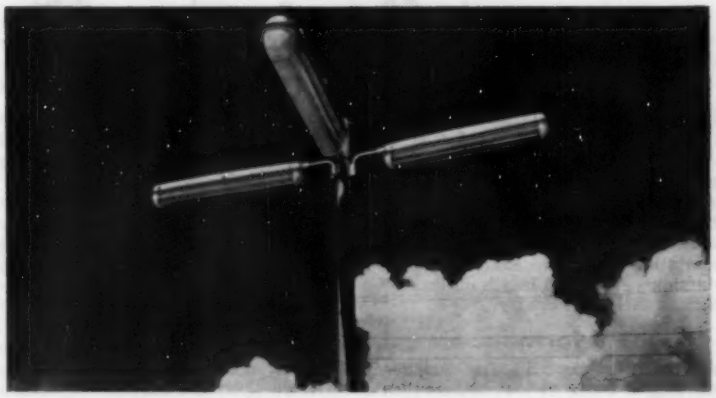
Catalog information is readily available upon request. Write The Union Metal Manufacturing Company, Canton 5, Ohio. In Canada: The Union Metal Manufacturing Company of Canada Limited, Brampton, Ontario.

UNION METAL

Monotube Lighting Poles

This installation was an award-winning entry in the 1957 International Lighting Competition. It was designed by Palmer & Baker, Inc., Consulting Engineers, Mobile, Alabama.

Tee-Lighting Streets



AT the April 1 coming-out party, held at the Hotel Sheraton-Astor in New York City, for new General Electric street lights, it was announced that "Tee-Lighting" was being tried out in San Francisco.

In operation, three luminaires are mounted on a single pole. Two two-lamp, flanking units are installed end to end and parallel to the curb while a third—which may be either a two-, four-, or six-lamp luminaire—is extended over the pavement.

For those applications requiring lighting levels of only one to two foot-candles, the perpendicular unit may be omitted. For installations where even lower illumination levels are specified, luminaires may be mounted parallel to the curb and one to the pole.

Where three to five foot-candles are required, Tee-lighting will provide them. The perpendicular unit provides the pavement brightness so necessary to good driver visibility, while parallel-mounted luminaires add high intensity illumination. If illumination levels of this magnitude were to be designed, using conventionally mounted fluorescent luminaires, poles would have to be placed closer together. Cost of a system of this kind, according to Henry J. Chanon, marketing manager of the Outdoor Lighting Department, would be considerably higher than that involved in mounting the three units of a "Tee" system on fewer poles spaced at greater distances.

BIG Fluorescent Luminaire

Until April 1958 a mayor, wanting to see how the brightest lighting looks on a street or how a street looks under the brightest lighting would have journeyed to Indianapolis. There, as was described by THE AMERICAN CITY, January 1956 (see "The World's Brightest Street Light," p. 131), are the street fluorescent luminaires employing 12 six-foot lamps generating 64,000 lumens.

Now the mayor can go to Minneapolis if more convenient. There he will see the very latest—introduced at the Sheraton Astor Hotel in New York City on April 1—king-sized fluorescent luminaire employing six 6-foot Power Groove lamps to generate 55,800 lumens of light.

For maximum light output, the luminaire relies on recirculating fans, which control internal temperature. When night air temperature is above 10° F., two thermostatically controlled fans go into operation. One fan draws air into the hood through shielded side vents, circulates it within the sealed reflector and expels it from the unit. This prevents bugs, dirt and moisture from entering the luminaire. The second fan continuously recirculates captive air across the lamps and ballasts. Both fans are powered by self-lubricating motor.

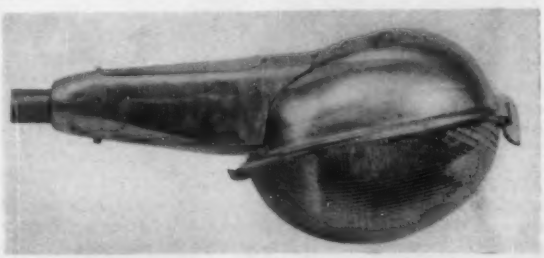
This simple cooling system has made possible a reduction in the size of the luminaire which is no larger than a conventional General Electric four-lamp unit.

Installation requires only two terminal connections. Loosening either side of the one-piece acrylic globe makes the luminaire readily accessible for cleaning or relamping. Wind-loading tests have shown stability at 100 mph. The luminaire is for whiteways, major intersections, toll plazas, parking lots, highway "danger spots" and any wide thoroughfare.

Mercury Luminaire with Internal Ballast

THE cost of new street and highway lighting installations can be slashed by $40-$50 per pole by use of a new 400-watt mercury luminaire with a built-in ballast. This was unveiled at General Electric's outdoor lighting equipment demonstration April 1, 1958. The luminaire-ballast unit eliminates the need for costly transformer-base poles or pole-top adapters and complicated wiring.

Marketing Manager Henry J. Chanon, pointed out that a typical mile-long mercury installation would require about 52 poles staggered at intervals of 100 feet. On that basis, the new luminaires would provide savings of $2,100 to $2,600 per mile. A large eastern city



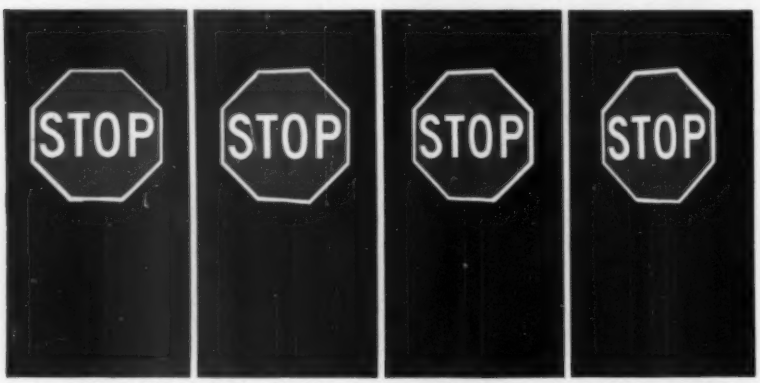
"Power Pack" mercury luminaire features an integrally-mounted ballast in the elongated slipfitter.

What characteristics should an effective traffic sign possess?

Broadly speaking, the answer to this question lies in investigation of 4 vital factors. As you may guess, the first of these is performance, far and away the most obvious sign feature to motorists. And, after this come the equally important economic considerations of sign fabrication cost, installation and maintenance ease, and durability, or useful length of life. Let's look at each more closely.

Performance

A motorist on the road after dark needs the help of traffic signs even *more* than a daylight driver. Accident statistics bear this out. With growing traffic volume—20,000,000 vehicles on the road after dark—the need for modern 24-hours-a-day signing cannot be denied. Whether the sign is a 24″ x 24″ curve warning or an 8′ x 10′ guide panel, *reflectivity* is a characteristic an effective sign must possess.



A sign of "Scotchlite" Reflective Sheeting performs without serious loss of brilliance through typical entrance angles of 0, 10, 20 and 30 degrees. Wide angle optical characteristics help compensate for road curvatures, installation inaccuracies and accidental or deliberate damage.

Brilliance of "Scotchlite" Reflective Sheeting doesn't "black out," even in rainy weather. All-weather visibility of shape, color and legend means full-time traffic sign effectiveness.

Moreover, since the need for communication is greater after dark, the need to show all three elements of a traffic sign—shape, color and legend—is also greater. A sign that only shows one of these elements after the sun goes down is only doing 1/3 of its job. A modern sign should show all 3 to work for full-time safety at 100% effectiveness.

Effective communication in all weather is another desirable modern traffic sign performance characteristic. Federal Government specifications (military specification R 13689A) call for sign material that maintains *at least* 75% of dry reflection when subject to rainfall testing. The higher the percentage, the better the sign . . . for again, motorists need the help of traffic signs most when driving conditions are the worst.

The final performance factor is angularity. Typical tests of sign materials at viewing angles of 0°, 10°, 20° and 30° quickly show that a truly effective sign material will retain high reflective quality through any angle of approach. It allows you to put each sign where it ought to be. Wide angularity gives you a measure of compensation for installation inaccuracies and for road curvatures. Also, if a sign is accidentally or deliberately twisted or bent, it will still communicate because wide angle reflectivity keeps the sign message from disappearing.

Durability

This is the first of the economic considerations. You naturally want signs that withstand weathering well enough to fit into your normal sign maintenance cycle. And you want reflectivity to remain high throughout the sign life so that effective communication with the motorist is not interrupted by decreased brightness.

Economy

For economy in effective signing, you want the lowest overall dollar cost consistent with desired performance and durability characteristics. The material that gives you this figure—(formed by dividing length of useful life into the cost of fabrication, installation and maintenance)—will minimize the true cost of communicating with the motorist.

Fabrication

Sign fabrication should be fast, clean and foolproof to insure uniform signing at lowest cost. Highest optical performance depends on a quality controlled sign material not subject to variations in technique or conditions such as humidity and temperature.

The material you choose will also provide more flexibility if it lends itself to both machine and hand application to any kind of backing. For further simplification, it should give you quick, easy refurbishing of old signs, flat or embossed, as well.

These four primary factors and their parts, according to leading engineers, make up the characteristics an effective traffic sign should possess. How do you get all of them at once? We believe there is only one sign material which provides them all: "Scotchlite" Reflective Sheeting. This is the precision all-weather sign material that can give the performance motorists need, with the durability and ease of fabrication and maintenance that you demand.

Sign fabrication with "Scotchlite" Reflective Sheeting means professional results. Signs can be made in minutes by hand or machine.

★ ★ ★

See your 3M Representative soon and get more information on the truly modern effectiveness of durable traffic signs of "Scotchlite" Reflective Sheeting. Or write for details to 3M Company, Dept. AB-58, St. Paul 6, Minnesota.

REG. U. S. PAT. OFF.

SCOTCHLITE

BRAND

REFLECTIVE SHEETING

PRODUCT OF 3M COMPANY RESEARCH

The term "Scotchlite" is a registered trademark of Minnesota Mining & Mfg. Co., St. Paul 6, Minn. General Export: 99 Park Ave., New York 16, N. Y. In Canada: P. O. Box 757, London, Ontario.

MINNESOTA MINING AND MANUFACTURING COMPANY—Where RESEARCH is the key to tomorrow

has already ordered 150 of the new lighting units.

A shatterproof 400-watt mercury vapor street and highway lighting luminaire with acrylic refractor, that ignores thermal shock from cold rain beating upon the hot refractor, withstands five times more exposure to blowing sand than can comparable glass refractors, and from which rocks bounce off, was described by C. J. Meloun, manager of engineering for the General Electric Outdoor Lighting Department.

A new 700-watt luminaire that normally uses 1,000-watt mercury lamps, either clear or color improved, operated at 700 watts, makes possible longer lamp life and improved lumen maintenance. According to General Electric engineers, an average of 26,400 lumens can be maintained throughout a 12-000-hour lamp life or an average of 27,400 lumens throughout a 9,000-hour lamp life. The extended lamp life fits the unit for whiteways, parking lots and traffic arteries where traffic is heaviest and replacement becomes a problem that must be considered.

Lighting for Interstate Highways

SOME of the factors to be considered in the design of a highway lighting system are presented in a 12-page bulletin published by The American Road Builders' Association, World Center Bldg., Washington 6, D. C. The treatment in *Highway Lighting* distinguishes between street lighting and lighting for highways which comprise expressways, fireways, rural trunk highways and major arterial streets.

Standard Practices and Guide Available

For applying fixed lighting to the interstate highways, the standard is the current American Standard Practice for Street and Highway Lighting. The best guide for treating tunnels and underpasses is the *Report on Tunnel and Underpass Lighting,* 1956, as formulated by the Illuminating Engineering Society Street and Highway Lighting Committee.

The specific elements of a roadway that warrant illumination are:

Interstate Highways and other controlled Access Roadways—

a. Interchanges and intersections.
b. Connections to service areas.
c. Elevated and depressed expressways.
d. Tunnels and underpasses.
e. Bridges, overpasses and viaducts.
f. High traffic density sections.
g. Areas made unusually hazardous by regular or frequent conditions impended by weather or climatic conditions.
h. Transition sections such as changes in number of lanes and traffic direction.

Uncontrolled Access Roadways—

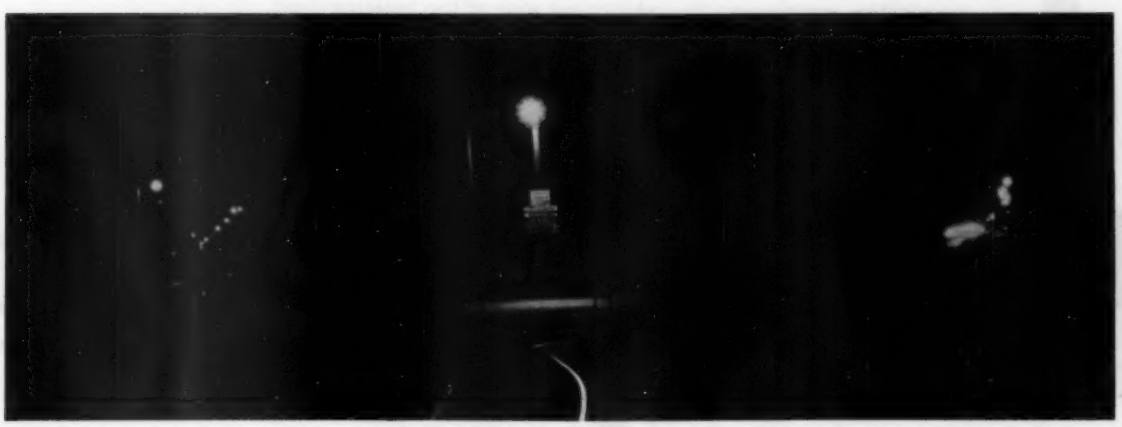
All of the above and in addition:

i. Dangerous curves and hills.
j. Railroad grade crossings.
k. Approach to urban areas.
l. Highways running through municipalities with built-up areas such as suburban business districts and congested residential section areas.

In view of the higher operating speeds that we are encountering on new controlled access highways, indications are that illumination greater than the minimums now generally used is justified. While lighting on all elements of the roadway is important, the treatment of certain locations and roadway conditions should be emphasized. Intersections, depending upon the complexity of streets and traffic, require more illumination than that on the streets forming the intersection. Lighting should be adequate for quick and easy identification of entrances and exits and should insure that the signs may be easily observed and read. Pedestrian crosswalks should be illuminated effectively.

Adaptation Lighting

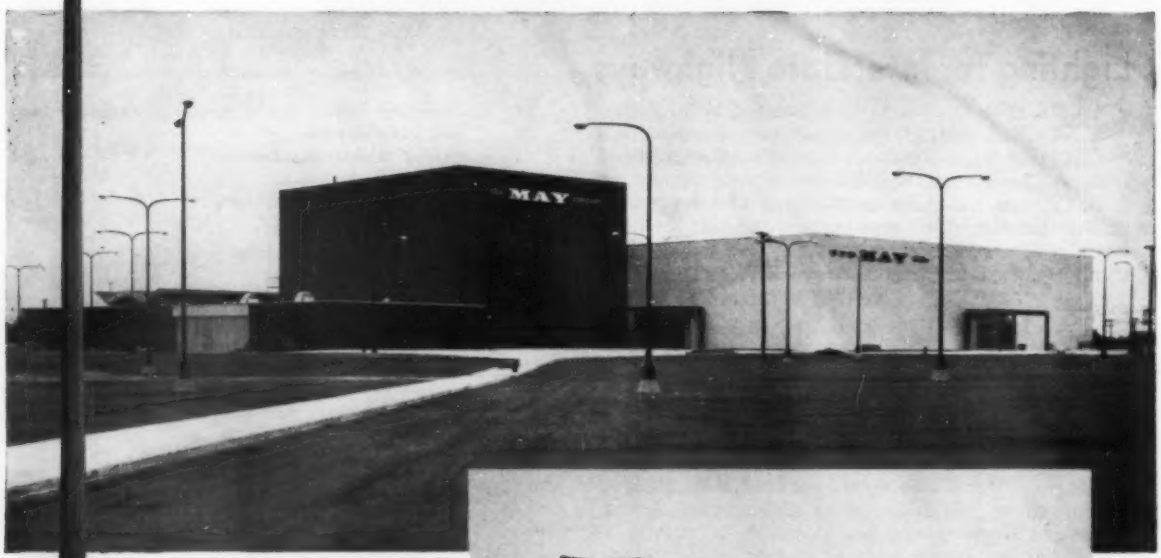
Adaptation lighting of roadways where traffic enters a lighted area is of particular importance. Such lighting gives the driver's eyes time to adapt themselves to the light and darkness on entering and leaving these



What's wrong with this picture?

Modern stores, like modern cities prefer the distinctive design of—

Millerbernd *lighting standards*



Single and Twin-Arm Millerbernd standards light the 2,000-car parking lots and the approaches to this ultra-modern suburban department store. Millerbernd High-Strength steel construction with heavy tapered bases can take the punishment of parking lot services.

You can be sure that the style-conscious May Company, one of America's foremost retail organizations, would place a high value on *harmony in design.* Note in the above photos of their beautiful new store in suburban Cleveland Heights how the graceful, clean and simple lines of Millerbernd lighting standards, on parking lots and approaches, *complement the architectural style* of the building itself.

In your city, the classic, modern design of Millerbernd lighting standards will enhance the appearance of any new developments . . . and markedly up-date the appearance of all streets and thorofares. Their modern styling makes an immediate and lasting impression on citizens and visitors *that here is a progressive city.*

Write for booklet OTA
Describes Millerbernd Elite Standards and four other modern styles. Shows new developments in fluorescent-type standards.

Millerbernd
MANUFACTURING CO.
WINSTED 1, MINNESOTA

areas. On 70-mph roads, for example, such lighting should extend at least 1,000 feet each side of the interchange or other area; whereas on 40-mph roads, 600 feet is sufficient. Graduation of lighting can be accomplished by changing luminaire spacing or by the use of smaller lamps at the same spacing.

Among the matters to be considered are: the selection of suitable equipment including the light source and luminaires and accessory apparatus; the choice of poles and their placement with regard to the roadways, the length of luminaire supports to obtain the proper overhang of the luminaire over the roadway. Feasible methods of power supply must be arranged and the design of electrical distribution determined.

Lighted Lot Parks 25,000 Cars a Day

Revere luminaires on Kerrigan steel standards light shopping center in St. Petersburg, Fla.

TYRONE shopping center—one of Florida's big ones—is in St. Petersburg. Its 50 stores offer more than a third of a mile of modern store fronts. All 50 stores can be reached in bad weather without the shopper leaving the canopy overhang.

Over 35,000 people attended the opening. From morning until closing time, the vast well-lighted parking field, which can accommodate 25,000 cars daily, required a special squad of police to handle the surge.

The 30 Revere luminaires were carried on octagon-shaped Kerrigan Weldforged steel poles. The dark posed no problems for the thousands who streamed through the parking lots into the new stores and streamed out to their easily located cars. Management considers the octagon-shaped Kerrigan standards and the Revere luminaires vital factors in making shopping easier, in building customer confidence and in promoting sales.

San Diego Relighted

A SMALL group of property owners and merchants were convinced it was vital to the city's progress to relight Broadway and a major portion of the downtown area of San Diego, Calif. Financing was the problem, since this was one of numerous public improvements clamoring for attention in this fast growing community.

State Act Paves the Way

The California Improvement Act of 1911 permits property owners to finance desired improvements if 60% of the property owners sign petitions. A few enthusiastic sponsors began promoting the idea with their business neighbors and, before long, the required quota of signers was obtained. As a result, Broadway now has a modern lighting system starting at the harbor—headquarters of the 11th Naval District—and extending 22 blocks past stores, hotels, and the business district.

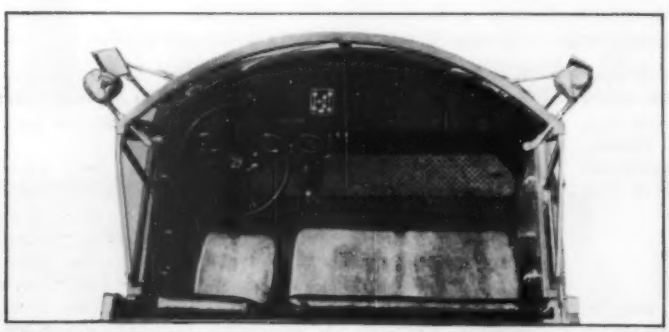
Mercury vapor luminaires are mounted from 6-foot arms on 30-foot poles consisting of the original Union Metal cast-iron base section and a new, longer shaft and bracket arm. The new lights provide five times as much illumination on the pavement as 1,924 units. This is accomplished with a single 20,000-lumen mercury vapor light suspended 30 feet above street level, whereas formerly the standards mounted two 10,000-lumen upright incandescent luminaires at a height of 23 feet.

In addition to the relighting on Broadway, Union

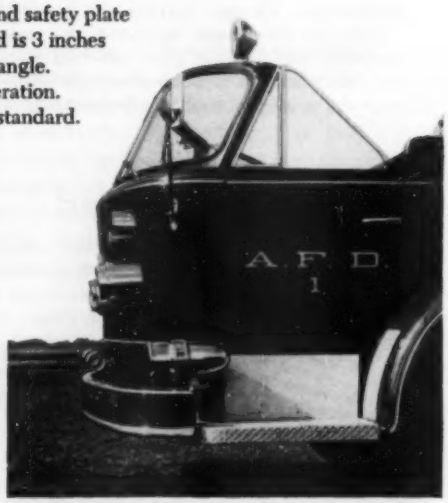
(Continued on page 156)

Announcing... A SUPERB

The new modern wide cab (76 inches) with the wrap-around safety plate glass windshield improves visibility for the driver. Windshield is 3 inches higher for increased weather protection and higher visibility angle. Two twin seal beam headlights for greater safety in night operation. Two red warning lights and two amber directional lights are standard.



All seating space is increased. The driver's seat is a separate adjustable type. Driving compartment 71 inches inside width. No crowding! No straddling of hand brake or gear shift levers!



New dynamic silhouette cab, open seat or closed for streamline appearance. New heavy duty front bumper. Twin supports for rear view mirror.

NEW FIRE ENGINE

by AMERICAN LAFRANCE

Spartan 1000 G.P.M. Deluxe

The New *900* Series . . . CUSTOM OR DELUXE

IT'S A FIREMAN'S FIRE ENGINE!

Lower in height, easier to handle; short turning radius (only 25 feet); no increase in overall width or length; eight compartments, six are enclosed; simplified pump controls; Twinflow pumps now equipped with ball type discharge gates, full 2½ inch flow passage for higher efficiency. Handle type lock. Pumps available in all N.B.F.U. standard capacity ratings, Class A; new positive displacement primer with manual control, no solenoid or push button switches; new pump control instrument panel; hinged battery covers; rounded corners on body and side compartments.

New from every angle!

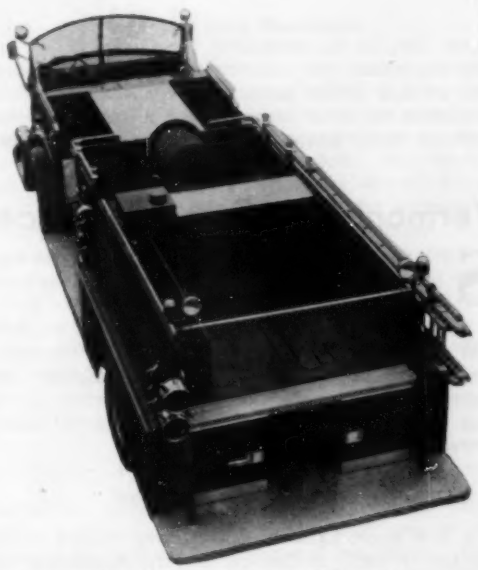
It has all the features for greater operating ease and accessibility for maintenance. Unexcelled performance and riding quality. There are 8 different engines for a complete range of power selection including the new 300 B.H.P., V-8. A new torque converter is also available to eliminate the clutch and gear shifting.

AMERICAN LAFRANCE CORPORATION

ELMIRA, NEW YORK, U. S. A.

LAFRANCE FIRE ENGINE—FOAMITE LIMITED

TORONTO, 9, ONTARIO, CANADA



Designed for maximum efficiency

The wide low hose body is easier to load and use. All equipment compartments and equipment mounted is designed for maximum accessibility. The 300 gallon water tank shown above is standard. Fresnal lights are optional extra.

NEW P&K
CONTROLS WIDEST
Now, something really new, designed to meet the preference of traffic engineers—a mast arm 30 feet long. Here indeed is an added measure of good looks and safety at a cost that compares favorably with span wire. This new arm is both tapered and elliptical, forming a truss design that provides all the strength that's wanted and then some. Set on a 17-foot standard, it offers maximum visibility, yet does not interfere with tele-
P&K
WRITE FOR CATALOG TE-1, CONTAINING A WEALTH OF IDEAS FOR
PFAFF & KENDALL • 84 FOUNDRY

(Continued from page 153)

Metal through its subsidiary, the Pacific Union Metal Co., has within the last two years also supplied over 500, 25- and 30-foot poles, with 6-foot arms, for modernization on other city streets. Using 20,000-lumen mercury vapor lamps, the standards are spaced at an average of 41½ feet staggered. The resultant average illumination on the pavement is 4 foot-candles.

Property owners in other business areas have come to realize the benefits derived from planned, modern, street lighting and are having petitions circulated at this time.

Vermont City Goes Fluorescent

ST. ALBANS, Vermont, a sugar maple center (population 9,000), has the largest installation of fluorescent street lights in the state.

Working as a team, municipal officials of St. Albans and the Central Vermont Public Service Corporation decided in late 1956 that the old "ornamental" street lighting system in the city's business section provided less than adequate illumination and even fell short of being "ornamental".

New Lighting Contract

A new street lighting contract was worked out and, on July 1, 1957, 49 General Electric fluorescent units of 22,000 lumens each, and several 21,000-lumen mercury units, at dangerous street intersections, began their job of bathing downtown streets in "modern" light. Gone was the old-time lighting system consisting of forty 10,000-lumen, ten 2,500-lumen, and twenty 1,000-lumen incandescent units mounted on cast-iron and Union Metal ornamental poles.

Under the modernization program, three of the city's busiest main streets were relighted. Twenty-five of the new fluorescent units mounted on aluminum poles replaced 35 incandescent units of 10,000 lumens each along Main Street. Six of the 22,000 lumen fluorescents on aluminum poles replaced 10 of the 2,500 lumen incandescents on Kingman Street, and on Lake Street, another six fluorescent units replaced five older type units of 10,000 lumens each. Twelve new units mounted on wooden poles also were installed on Lake Street, replacing 20 incandescents of 1,000 lumens each on cast-iron poles.

In the interest of economy, overhead wiring was used throughout even though the old system being replaced had underground circuits. Otherwise, no corners were cut in providing St. Albans' business area with the best illumination possible. The city fathers in this Vermont community believe the new street lighting system gives them the most value for their dollar in the municipal budget.

M. P. Foster, *Sales Manager*
Northwestern Division
Central Vermont Public Service Corp.

30 FOOT MAST ARM INTERSECTIONS

phone wires. What's more, because this mast arm, as well as the standard, is made entirely of aluminum, it is maintenance-free, keeping its natural trim appearance and good looks for years to come.

CONTROLS 6 LANES

Here is the maximum in visibility for 6 full lanes of traffic . . . good looking, safe, and easy to install.

SUPPORTS AND TRAFFIC CONTROL SIGNALS AND SIGNS

STREET • NEWARK, NEW JERSEY

Pedestrians and Vehicles Are Visible at Night

SAN LEANDRO, Calif. has a new white way consisting of 14 blocks lighted by 102 fluorescent luminaires. Each luminaire is made of four 100-watt fluorescent tubes producing a total of 21,000 lumens. They are mounted on attractive, 30-foot Union Metal Mfg. Co. steel poles. The arrangement is opposite, with 90-foot spacing between poles.

Assessment District Formed

Local businessmen formed a street-lighting assessment district. They gained the cooperation of their power supplier, the Pacific Gas and Electric Co. The entire program was completed within three years.

One feature is the provision for special occasion decorative lighting. A conduit with an outlet for 120/240 volt power is mounted on the angle iron frame of each luminaire, while a rectangular hooked clip is welded to the street side of each pole. This permits easy attachment of support wires for special decorations. The hooked clips eliminate the expense of stringing extra power cords for festoon lighting.

Existing conduits were utilized by placing the main feed at the Y intersection. Six circuits, which terminate at a control box, serve to feed the remaining luminaires.

With new lighting, pedestrians, vehicles and signs are clearly visible.

Who Pays for Christmas Lighting?

A SURVEY of 35 towns and cities in Virginia revealed that in 14 of them the City Council appropriates money for Christmas street lighting. The sums vary from $76 in Clifton Forge (population 5,800), to $1,500 in Norton (population 4,300). Most of the cities pay the electric bill for the special lighting. Nine of the cities furnish municipal labor. The Retail Merchants Association or the Chamber of Commerce participate in the cost in 25 of the cities. The power company helps in two of them.

In Martinville, for instance, the Retail Merchants Association sponsors as a project Christmas street lighting and parade. They handle with private contractors each year the light cost and installation. Project is financed by assessment on all downtown businesses, etc. City is assessed (based on front footage) and paid $1,250 in 1957. In Newport News, the merchants also sponsor lighting. Each business is asked to pay its share based on front footage on streets lighted. The city pays its share based on 50 feet ($35) and pays $50 for a side street for jail and courthouse, for a total of $85.

MIRO-FLEX "SIGNS UP" AMERICA

CITY • COUNTY • TOWNSHIP • STATE

All over America—and in a number of foreign countries—Miro-Flex is looked to as the **"standard"** to go by for quality traffic control signs and street name assemblies. That's because purchasing bodies know that Miro-Flex signs are made to last—a sure sign of a wise investment.

Miro-Flex signs are embossed for greater readability than flat-surfaced signs, and they are of the highest quality because they are made of zinc-coated, Bonderized steel, finished with high-grade enamels, baked in thermostatically controlled ovens. This time "sign up" with Miro-Flex!

WRITE FOR COMPLETE CATALOG

THE MIRO-FLEX CO., INC.

1824 EAST SECOND STREET WICHITA 7, KANSAS

Some New Ideas in A Swimming Pool

(Continued from page 121)

ground surface outside the closure rather than on the pool water surface. Underwater lights may have to be turned off during short periods of severe fly swarming each year to prevent their attraction to these lights and the water surface.

Public Address System

The project includes a complete public address system carefully designed for maximum utility.

A 100-watt Dukare amplifier will handle inputs either from a record changer or from a multi-station microphone system. Three 25-watt, weatherproof, compound speakers provide sound coverage for the area.

The multistation microphone system allows full use of the public address system for swimmer control, swimming and diving instruction and event announcement. Exterior microphone outlets are located at the 3-meter diving stand, at the 1-meter boards and outside the pool supervisor's office. An outlet in the pipe gallery at the diving observation windows permits convenient communication between diver and underwater observer.

Parking

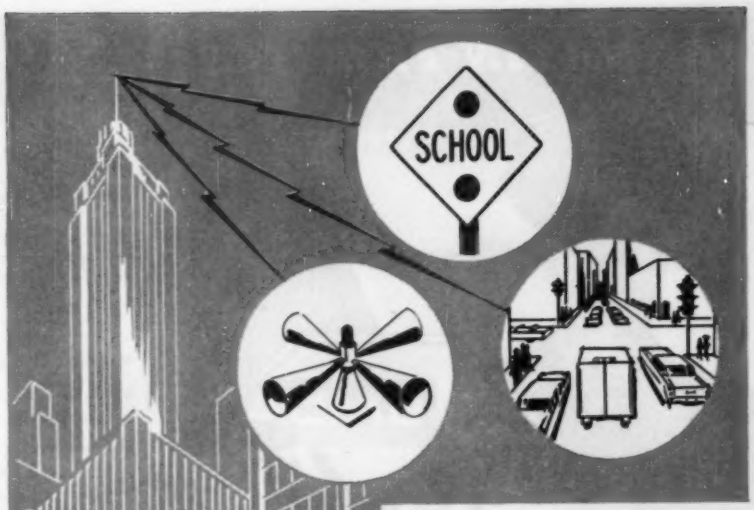
The site is bounded on the west and north sides by city streets widened to permit parking on both sides. The diagonal orientation of the pool with respect to the streets results in street parking for more than 100 cars within one-half block of the bathhouse entrance. An on-site, floodlighted, bituminous-paved parking area at the front of the bathhouse accommodates 125 cars. Park area immediately adjacent to the pool can be developed for additional off-street parking, if required. Space for over 400 bicycles in stands is provided as part of the bathhouse planning.

Minimum Maintenance

The Swimming Pool Committee recognized the unusually severe maintenance conditions imposed on pools in this region and consequently stated that, "the project must be designed for a 50-year useful life."

The following features are typical of the approach adopted to meet this requirement:

1. Monolithic, poured-in-place concrete construction throughout the pools with the



give your city the many benefits of traffic programming by radio with

EL-TEC

a wholly owned subsidiary of Standard COIL PRODUCTS CO.

radio interconnection 3-WAY TRAFFIC CONTROL

Electronic Protection Inc.

The only FCC Type Approved System for Emergency Traffic Control

EL-TEC radio interconnection is the answer to one of the most serious problems faced by expanding municipalities—increasing traffic congestion. EL-TEC gives complete traffic control in 3 important ways: Traffic programming, control from emergency vehicles, and Civil Defense evacuation control.

EL-TEC flexibility gives control of traffic during daily and seasonal changes, smoother flow of traffic in and out of congested business areas, and is expandable to meet growth needs.

EL-TEC emergency vehicle traffic control gives a high degree of safety to save lives and prevent injuries to both residents and city personnel. Equipment and property damage are greatly reduced to earn better insurance rates.

EL-TEC can be used with existing signal equipment and to control school and expressway signs. It is economical because no cables are used, no excavating is necessary and no wires to be hung.

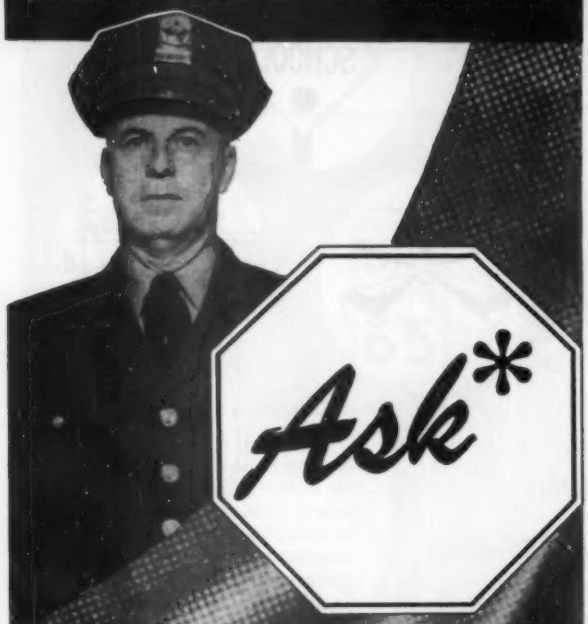
F.C.D.A. has accepted Electronic Protection's certification that the equipment meets F.C.D.A. specifications which makes it eligible for Federal funds—this gives cities 3-way control for less cost than one type interconnected cable control.

Write today and we'll arrange to give an actual demonstration in your city. You will see for yourself how El-Tec can give your city a safe and efficient traffic control program.

2097 North Hawthorne Avenue
Melrose Park, Illinois

8402

FRANKLIN FABRICS



Ask*

FRANKLIN WORSTED COMPANY
PHILADELPHIA, PA.

FABRICS

FOR YOUR UNIFORMS

You're sure —

when you specify our 2-ply

00% worsteds and

ted and dacron blends

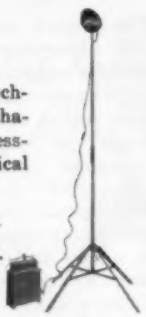
David E. Singer, Sales Agent
FRANKLIN WORSTED COMPANY
40 East 34th. Street, New York 16, N.Y.

Escolite — BETTER BRIGHTER

Exclusive Theft-Proof Locking Device

Deluxe 7" Light

- Brighter light.
- More economical to operate, less initial investment.
- Heavy-duty time-proven flasher mechanism. Electromagnetic pulse mechanism in Escolite has been used successfully for 20 years in other electrical control products.
- Heavy-duty neophrene sealed case.
- Complete line of flasher equipment. Transistorized lights available.

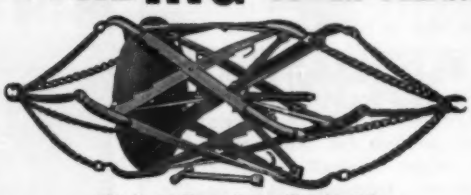


Utility Light

Write for literature and prices. Distributorships available.

ELECTRONIC SPECIALTIES COMPANY
BATAVIA 10, ILLINOIS

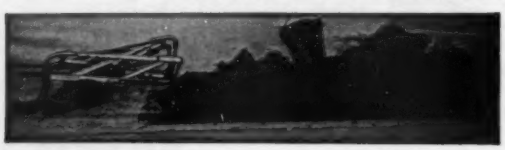
EXPANDING ROOT CUTTER SEWER CLEANER



Fits in on Every Sewer Cleaning Job
Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Open and in action removing roots and cake sediment like this.



Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY
108 East Walnut St. Nappanee, Ind.

design incorporating such details as:

a. Carefully laid out system of joints to provide for expansion and contraction without cracking.

b. Plastic, labyrinth-type seals, heat-fused to provide completely uninterrupted sealing of the jointing system.

c. A minimum of 8 inches of crushed stone subbase, together with a subdrain system under pool floors to prevent frost heaving.

d. Deep portions of the diving area subject to occasional uplift from high ground water designed to resist this force when the pool is empty.

2. The peripheral pipe gallery around the main pool allows access for maintenance of the piping system and eliminates the common trouble of pipe breakage due to differential settlement between the pool structure and buried piping. Mechanical joint cast-iron pipe supported on original undisturbed soil is used for the short runs where pipe must be outside the pipe gallery.

3. The pipe gallery is also used for access to underwater lights and as a route for electrical conduit, thus minimizing underground electrical circuits. Where underground circuits are necessary, the underground ducts terminate in junction boxes in the gallery, permitting easy conductor replacement.

4. Masonry wall construction, metal sash and doors, aluminum ventilation louvers, steel and concrete framing, perlite roof deck and similar construction materials virtually eliminate wood construction. Where wood must be used, it is treated with chromated copper sulfate preservative.

5. Straight-line, functional design without decorative detail.

6. All building bearing wall foundations and all pool wall footings are deepened to bear on firm, high-load capacity soil. Where nonload-bearing floor and deck slabs rest on fill, the filled area was stripped of compressible topsoil and the fill made with selected granular material mechanically compacted to at least 95% maximum density.

Ceramic wall-facing tile and ceramic floor tile with sanitary cove base provide readily maintained surfaces in the shower, toilet and footbath areas. Ceramic tile wainscote also protects lavatory wall areas. All other interior wall surfaces are of concrete block with two coats of rubber-base paint providing an impervious, readily cleaned surface.

Construction Cost

Six construction and equipment contracts, totaling $358,239, were awarded in May 1956.

Miscellaneous costs incurred by the city for parking area development and landscaping brought total

Are Your Filing Methods As Fast as Your Machines?

DESK STANDS

ROTARIES

FLOOR STANDS

CARD HOLDERS

TRAYS

CABINETS

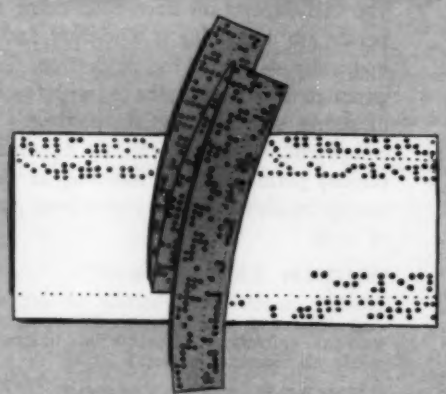
EXPANDER CABINETS

Ask the man from Acme to show you samples

ACME VISIBLE

speeds the availability of source material provides accessible filing of the products of

AUTOMATION



Electronic machines produce punched cards and tapes at astounding speed. Once punched many become permanent records to be used over and over again. Acme Visible Records and equipment provide for filing and fast finding, with SEEABLE indexing that speeds the handling of this material to keep pace with the machines.

ACME VISIBLE RECORDS, INC.
Crozet, Virginia

District Offices and Representatives in Principal Cities

ACME VISIBLE RECORDS, INC., Crozet, Virginia
We are interested in filing F-558
☐ Tapes (approx. length) _____
☐ Edge-punched cards
☐ I.B.M. Cards
} _____ (Approx. number of records)
☐ Have representative call. Date _____ Time _____
Company _____
Attention _____
Address _____
City _____ Zone _____ State _____

SEAGRAVE—*The Greatest Name In Fire Apparatus*

TC
TENNESSEE CORPORATION

Ferri-Floc
FERRIC SULFATE

The Superior COAGULANT
With The Plus FACTORS—

Ferri-Floc gives smoother, more efficient and trouble free operation. Whatever your particular water treatment problem may be, you can depend on Ferri-Floc doing a superior job and doing it efficiently and economically — Ferri-Floc is a free flowing granular salt which can be fed with few modifications through any standard dry feed equipment. It is only mildly hygroscopic, thereby permitting easy handling as well as storage in closed hoppers over long periods of time.

WATER TREATMENT

Efficient coagulation of surface or well waters. Aids taste and odor control—Effective in lime soda-ash softening. Adaptable to treatment of nearly all industrial waters.

SEWAGE TREATMENT

Ferri-Floc coagulates water and wastes over wide pH ranges—it provides efficient operation regardless of rapid variations of raw sewage and is effective conditioning sludge prior to vacuum filtration or drying on sand beds.

Ferri-Floc
TC
FERRIC SULFATE

SULFUR-DIOXIDE
HIGHEST QUALITY
SO_2

SULFUR-DIOXIDE is effectively used for dechlorination in water treatment and to remove objectionable odors remaining after purification.

COPPER
TC
SULFATE

COPPER SULFATE will control about 90% of the microorganisms normally encountered in water treatment plants more economically than any other chemical.

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Rapid floc formation

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Bacteria removal

Ease of Operation

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construction cost to approximately $375,000.

Construction started in June, 1956. However, slow structural steel deliveries and a regional carpenters' strike combined to permit only 30 days' operation before the 1957 Labor Day closing date. Formal dedication has been deferred until after the 1958 season opening, when ceremonies in keeping with the character of the project are planned.

Flow Tests on Supply Main Shows Average "C" Value of 144

(Continued from page 9)

pressures, flows and distance, were determined as follows:

1. Pressure at the city end of the line—by measuring the depth of the water in the storage tank, the elevation of the bottom of this tank having been tied in by surveyor's levels with the profile of the line.
2. Pressure at the filtration plant end—by installing a calibrated pressure gauge on a fire hydrant out in the yard, thus eliminating any head loss in the Venturi meter or in the fittings around the plant.
3. Volume of flow—by means of the plant meter.
4. Length of test section—taken from the surveyor's profile of the line.

Tests were made on four rates of flow varying from 2.02 mgd to 2.93 mgd. ***Table I*** shows the Williams & Hazen "C" factor for each test, calculated by using a hydraulic slide rule. These average out to a value of 144. *(Table I* on page 13.*)*

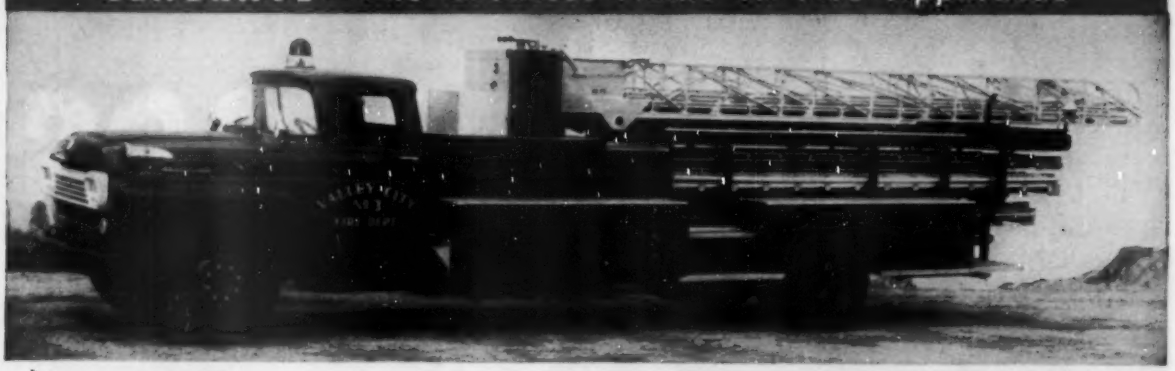
Twice As Much Water

The new river supply more than doubled the amount of water available for Cleveland and the plant was so designed that its capacity could be increased from the present 2.0 mgd to a maximum of 6.0 mgd. It was designed, and its construction supervised, by Wiedman and Singleton, Consulting Engineers of Atlanta, Ga.

Besides enlarging its water system, Cleveland also recently completed a $450,000 activated-sludge type sewage treatment plant, and made other additions to its sewage disposal system.

Overall cost of the water works and sewage disposal construction amounted to slightly more than $3 million. Bond issues were sold as needed—first a $600,000 issue, then one totaling $1,800,000, followed by several smaller issues.

SEAGRAVE — *The Greatest Name In Fire Apparatus*



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Yuma, Arizona Fire Department, Chief Bernard Raebel —Seagrave Custom-Built Aerial Ladder with ladder pipe in action.

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AC-5-58

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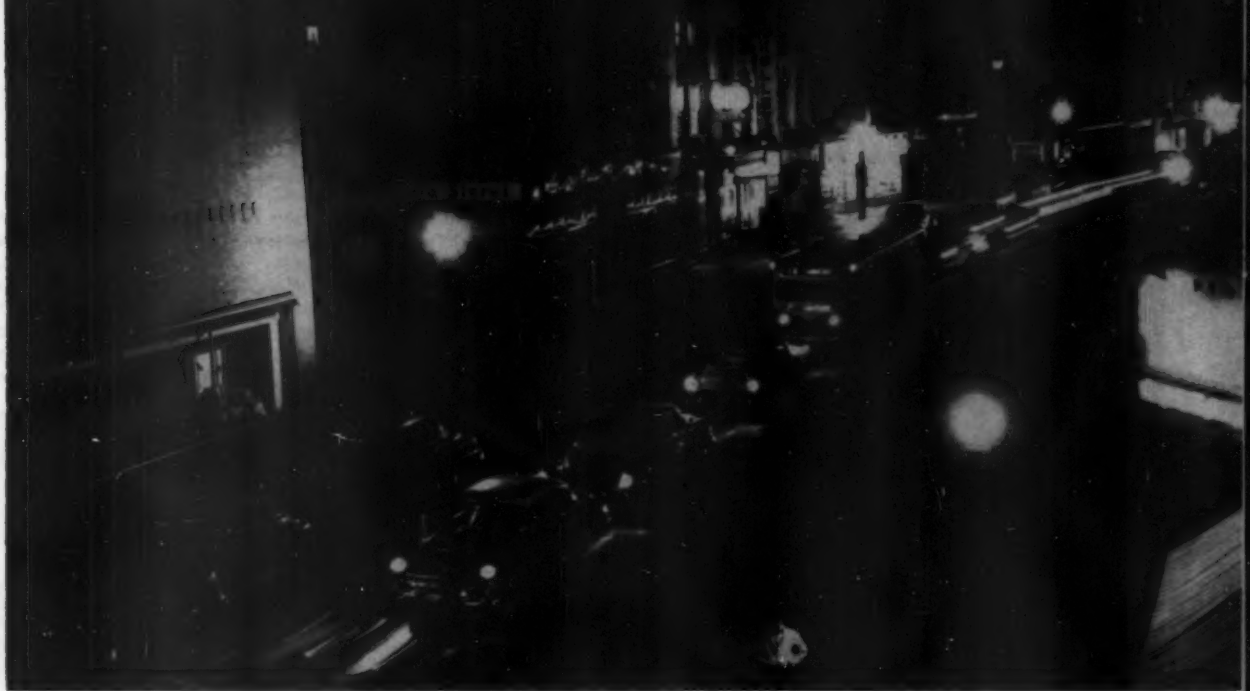
King-Seagrave Ltd. — Woodstock, Ont.

2 to 3 times

at no increased operating cost



With Westinghouse OV-35 Luminaires—first to be engineered and designed specifically for color-improved fluorescent mercury lamps!

Primary streets with old-fashioned incandescent lighting can now be properly lighted at high levels for little or no increased operating cost!

This is accomplished by Westinghouse developments that permit the OV-35 Luminaire to deliver *full* advantages of color-improved mercury lamps!

These mercury lamps give as much as *three times more light per watt* than old-fashioned incandescent sources. They also *outlast* old-style incandescent lamps by as much as seven times! And the OV-35 is the *only* luminaire engineered specifically for these superior mercury lamps!

The OV-35 features an exclusive sealed optical system that delivers greater illumination, with unparalleled efficiency, directly onto the roadway!

This OV-35 has a housing of cast aluminum—a special glass refractor of custom prismatic design!—and a reflector of Alzak-processed drawn aluminum!

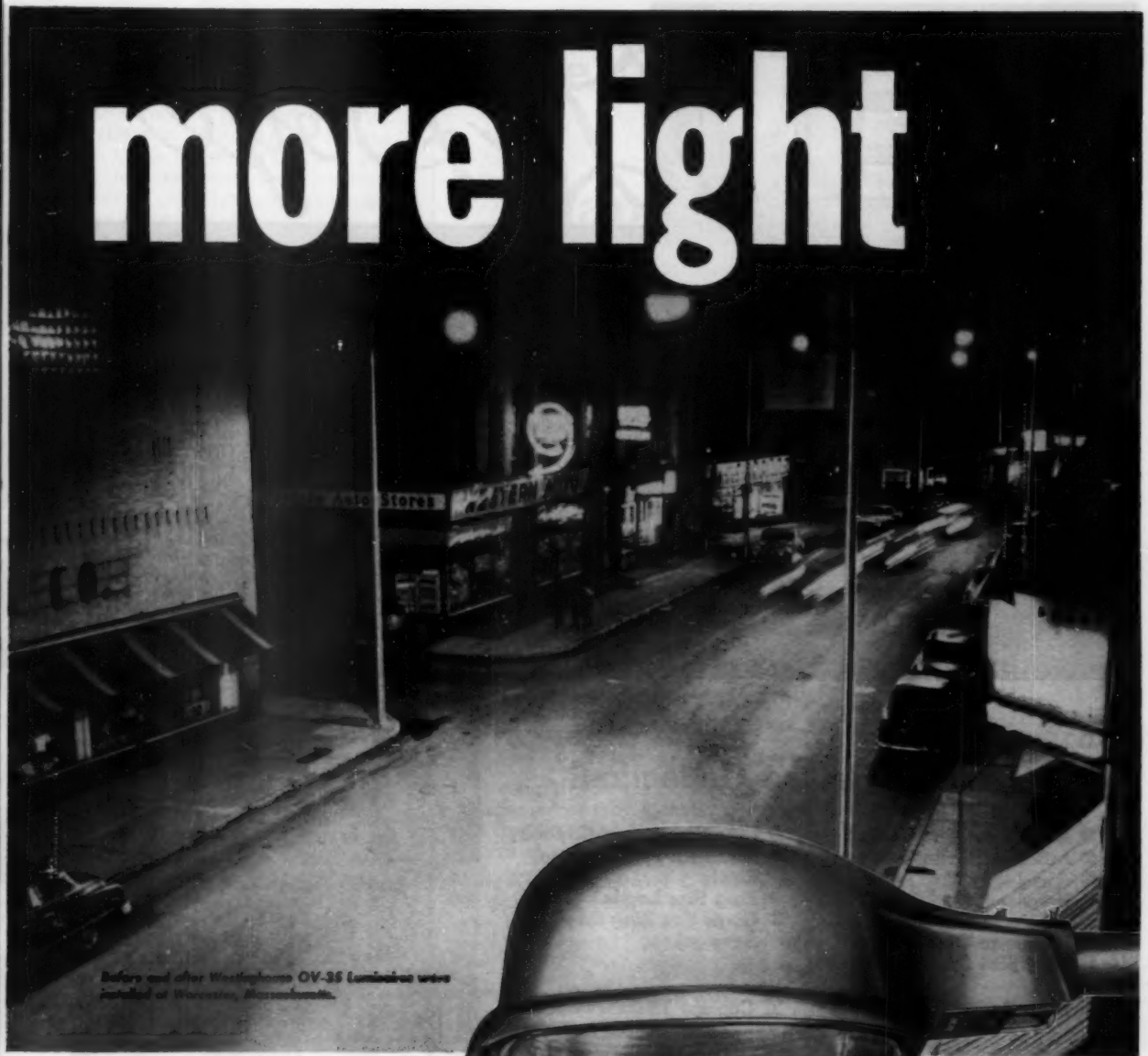
Its slip-fitter provides quick, easy mounting and adjustable alignment. Its automatic latch permits fast, "one-hand" maintenance. Yet the seal is tight on special gaskets. The Westinghouse OV-35 Luminaire is moisture-proof and bug-proof!

This OV-35 is accredited for many of the foremost advancements in modern mainstreet lighting today!

Westinghouse OV-10 now brings the same ideal illumination to residential streets!

The OV-10 delivers the same 2-to-3-times-more-light and the same extraordinary economy for the proper lighting levels of secondary streets! It has, in general,

more light



Before and after Westinghouse OV-25 Luminaires were installed at Worcester, Massachusetts.

the same marked design and construction superiorities of all Westinghouse street-lighting luminaires. One simple move of the socket gives a choice of light-distribution to suit illumination requirements for virtually *any* secondary street!

Accurate, forthright analysis of every street-lighting problem. Soundest recommendations at lowest practical cost!

Westinghouse makes optically superior luminaires—for every type of street-lighting application—that most effectively utilize every type of light source!

Your Westinghouse Lighting Engineer, therefore, recommends only the best possible luminaire for each street-lighting situation—consistent with the lowest practical costs.

Call your Westinghouse Representative, or write to Westinghouse Electric Corporation, LIGHTING DIVISION, Edgewater Park, Cleveland, Ohio. J-04454

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King Size Features create a new approach to Refuse Collection!

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- Gives You King Size Savings!

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New Lo Loading Height

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Erie, Pa. Continues Redevelopment

ERIE, Pa. has entered the third year of its redevelopment campaign, according to Mayor Arthur J. Gardner. This industrial and lake port city has designated seven neighborhoods as potential urban redevelopment areas, one of which is now in the development stage.

A proposed minimum housing code will be adopted by this September. Revised building and electrical codes also are set for early adoption.

During 1957, the Planning Commission completed and adopted a comprehensive community plan including land use, major thoroughfare and community facilities plans and a public works program. A revised zoning ordinance, discussed at several public hearings, is expected to be adopted by September.

Relocation

In the matter of relocating families displaced by urban renewal or other governmental actions, the federal Public Administration has allocated 126 low-rent units to the Erie Housing Authority. The City Council and the Authority have agreed to convert a number of two-bedroom units in the city-owned project into four-bedroom dwellings for relocation of large families.

Erie's Redevelopment Authority has named five major committees, composed of 50 citizens, representing a cross section of the city's population, to advance and support the purposes and benefits of the urban renewal program.

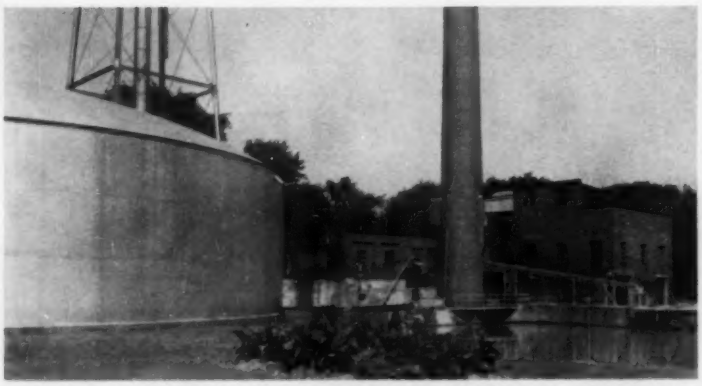
The upgrading of Erie embraces more than renewal of blighted areas, although Mayor Gardner lists it as one of the keystones. Some of the other major steps include:

- Port facilities anticipating the opening of the St. Lawrence Seaway.
- Expressways, linking Erie with Pittsburgh and the New York Thruway.
- An extensive street modernization program.
- Improvements to the airport.
- School, hospital, recreationalfacilities.

Policewoman Triples Ticketing

THE LEAGUE of Iowa Municipalities reports that Storm Lake has tripled its tickets for parking meter violations. The city recently employed a policewoman to check these violations.

Use Northern Gravel for Rapid Sand Filter



Philip Kobie, Superintendent of this Water Plant in Berea, Ohio writes: "Prices quoted to us were very good and orders were shipped without delay. This was appreciated because we only had a limited time to do this job. We will recommend this company anytime to any and every one."

Filter Sand Specifications

are carefully laid out. The Effective Sizes and Uniformity coefficients used by Consulting Engineers and also recommended by the American Water Works Association are the result of long years of research and experience.

The Northern Gravel Company is equipped to give you prompt shipment whether it be one bag or many carloads, exact to specifications. Filter sand can be furnished with any effective size between 0.35 MM and 1.20 MM.

Chemical Quality

of the filter sand is also important. It must be hard, not smooth, and free of soluble particles. This requires perfect washing and grading facilities. We have every modern device for washing, drying, screening and testing.

Filter Gravel

supporting the Filter Sand Bed, must be in turn, properly graded to sizes calculated to support the Filter Sand, and be relatively hard, round and resistant to solution.

Northern Gravel has no equal in facilities and our reserves of both sand and gravel are inexhaustible. Northern Gravel Company has been in business over 40 years. We guarantee uniformity of products and our records enable us to duplicate your requirements on short notice. Our location is central and we have commodity rates in every direction.

Northern Gravel Company

Box 307 **Muscatine, Iowa** Phone: AMherst 3-2711

The graceful lines of the Hubbard davit-type aluminum lighting standards add the charm of modern design to Philadelphia's historic streets. The city's ten-year plan to improve lighting is more than half completed.

HAPCO

Philadelphia's new davit-type lighting standards frame historic Independence Hall. Manufactured by Hubbard and Company's Aluminum Products Division, they are part of a ten-year street lighting improvement program which stresses beauty, permanence and economy.

This new lighting along Philadelphia's Walnut Street is providing ten times more illumination than the old system. "We believe the davit-type pole is the pole of the future, it's far ahead of any design we've seen anywhere" say Philadelphia's street lighting engineers.

Aluminum Standards Add Beauty and Permanence to Lighting in Historic Philadelphia...

A ten year plan that will step up illumination ten times, with less overall wattage, is now more than half completed in Philadelphia according to the city's street lighting engineers.

The plan introduces a new concept of beauty, permanence and economy in lighting standard design, and also *greatly reduces* lighting standard maintenance.

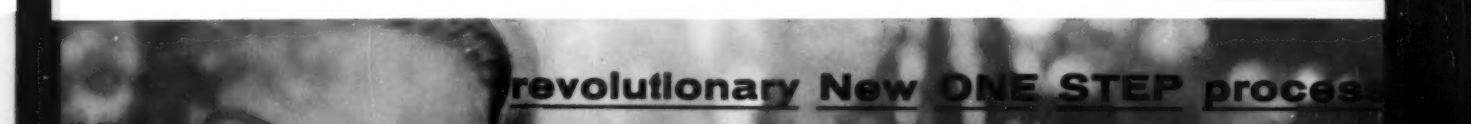
A large number of HAPCO davit-type lighting poles have already been installed, many of them along Walnut Street at historic Independence Hall and in the vicinity of the famous Connie Mack Stadium. This design resembles the familiar nautical davits used on board ships to suspend and lower small boats. The davit-type pole requires no brackets of the usual type and HAPCO design is doubly strong at the critical point of attachment because the extended portion fits over the upright part of the standard like a sleeve.

According to the engineers, the city had painted the street lighting standards every two or three years, running about $12.00 per pole. No funds have been allocated for the maintenance of the new aluminum poles—"simply because we don't expect them to require any maintenance."

In the complete line of HAPCO Standards and Brackets are designs for all types of modern, low-maintenance outdoor lighting installations. For more information write to Hubbard Aluminum Products Co.

HUBBARD ALUMINUM PRODUCTS COMPANY

Division of Hubbard and Company Pittsburgh 1, Pa.



Rear view of main structure of Central Service Building, showing entrance to lower floor. Bottom row of windows is middle floor area where carpentry shop, supplies, etc., are located. Road around right corner of building leads to main entrance.

New Haven Centralizes All Maintenance Services

New structure puts maintenance servicing under one roof in a smooth functioning building

By HEMAN B. AVERILL, *Director of Administration*
and
DAVID M. BEERS, *Assistant to Director of Administration*

NEW HAVEN, Conn. has centralized the servicing facilties for almost all of its municipal maintenance forces. Housed under one roof in our modern, five-level $675,000, structure are an automotive garage and repair shop, a central warehouse, a paint shop, a carpentry shop, a work room and storage area for plumbers, locker and wash rooms for Public Works Department street crews, and office space for public works supervisory personnel. Soon to be added on the outside will be overhead bins for loading trucks with salt and sand.

The new Central Service Building is one of the less glamorous and therefore less known accomplishments of an administration which has gained nationwide attention for its redevelopment program. Proud as Mayor Richard C. Lee has been of the slum clearance projects now under way in New Haven, it should be noted that his interest in efficient municipal government has not failed to penetrate into the heart of the city's routine day-to-day operations.

Taking advantage of the land contours, the new building is constructed to provide vehicular access to each of its three main working floors. The two intervening floors built on a split-level principle contain office space, locker rooms, and the heating plant. Actually four of the five floors are at "ground level," with only the administrative offices being elevated above the surface grade.

A wide, two-lane driveway circles around the outside of the building, leading down to the rear yard to truck entrances to the bottom working floor. Most of the lower floor is used for truck storage and protection at night, although there is a large vehicle painting booth at one corner of the garage. Certain materials which must be kept out of the weather are also stored in this area.

The middle of the three main floors is divided between building and street maintenance services and the central warehouse facility. A wide loading platform and ramp at floor level can accommodate several

On the lower floor, a Clark fork-lift maneuvers conveniently to load dry sand onto a truck that is waiting.

High Speed "Synchro-Copying"

The Apeco Uni-Matic Auto-Stat is the world's fastest, easiest to operate, all-purpose copy-maker. The original to be copied is inserted into machine . . . the copy feeds right out . . . original is instantly returned.

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The Apeco Uni-Matic Auto-Stat produces white copies that look *exactly* like the original. Whites are copied white, blacks are copied black—and middle tones in grays of equal intensity.

Copy in FIVE Colors . . . *anything written, printed, typed, drawn or photographed, right in your own office.*

The brand new Apeco Uni-Matic Auto-Stat is the greatest advancement in office copying in the last ten years. It is the culmination of many years of research and engineering by America's leading manufacturer of office copying equipment.

This revolutionary new machine makes copies in less than half the time of any other photocopy maker. It is so simple to operate—anyone is an expert the first time he uses it. The Apeco Uni-Matic Auto-Stat copies from any original—any color—on opaque or transparent paper . . . printed on one or both sides. It is handsome, compact, and light weight. Offers hundreds of time and money saving uses for every business at a price within the budget of the smallest firm.

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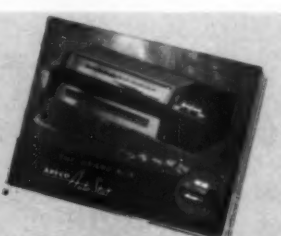

explaining in detail the new Apeco Uni-Matic Auto-Stat and how you can use this revolutionary copy-maker in your business?

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trucks simultaneously, either for picking up or unloading supplies. A model 96 AU automatic "Rite Hite" dock board manufactured by Loomis Machine Co. of Clare, Mich. makes it possible to adjust to the height of a variety of trucks. This is both a convenience and a safety feature. Adjacent to this ramp are stored such things as wooden horses, lanterns, and bleachers, which can easily be picked up by street crews and quickly carried to the required locations.

Clark fork-lift tractors carry supplies from the warehouse area and place them either on the loading ramp or right on the trucks. All supplies in the purchasing department's storage room are placed on pallets to expedite handling. These include such a wide range of things as school supplies, fence posts, pipe, lumber, paper towels, and used typewriters.

Carpentry Shop

On this same level are the various working shops, including a modern, fluorescent-lighted and fully equipped carpentry shop. Between the carpentry and the sign paint shop is a fireproof vault for the storage of paint and other flammable supplies. Plumbing, heating and electrical tools are located in this same area, providing our building maintenance services with all the necessary facilities to carry on an efficient maintenance and repair program. Because of the availability of the loading ramp, it was decided to locate the broom winding machine for our street sweepers on this same level. Barrels of grease and oil are also unloaded on this floor and hooked up to high-pressure hose lines through which the liquids are pumped to the automotive shop overhead as needed.

The remainder of the building's 63,000 square feet of working space is on the top level, which is actually street level. In this garage space are the repair facilities for all types of automotive equipment, including tools and parts for handling such special equipment as fire apparatus, street sweepers, refuse collection trucks (load-packer) and all the other vehicles peculiar to municipal government operations. Also on this floor is a large Jet-o-matic automatic washing machine which travels on a 40-foot overhead track. This machine is designed to accommodate the largest of city equipment—wetting, soaping, washing, and rinsing—all in one short operation.

The office space and locker rooms are in a separate four-level wing attached to the main building by means of an entryway and stairwell. Each of these floors has approximately 2,000 additional square feet. Besides the individual offices for the various supervisors, there is a radio-equipped control center which coordinates all of the street activities of the public works truck fleet. Two circular washstands as well as showers, toilets, and lockers have been provided for employees who report for duty at the building and return there at the end of a day's work in the field.

Besides a large parking area for employees' cars, there is a filling station located on the grounds right at the main gate. This station can service both incoming and outgoing vehicles without delaying other equipment either entering or leaving the grounds. At the rear of the building three large mechanically-loaded bins will soon be constructed for the quick loading of salt and sand when winter road conditions set in.

How to Write Law For Air Pollution Control

A LAW providing for the control of air pollution should embody the following:

1. Provision for the initiation of governmental action and for control on a local basis, preferably by local governmental units.

2. Establishment of a state organization for technical assistance, to resolve jurisdictional problems, and to investigate and recommend corrective measures for pollution in local areas when requested to do so by local political units.

3. Recognition of the appropriate role of federal agencies and provision for cooperation on a national and international level.

4. Provision for rule-making and enforcement in such a manner that the separation of legislative, administrative, and judicial functions of government are preserved fully.

5. Provision for registration of sources of emission.

6. Authority for reasonable rights of entry.

7. Provision for cooperation in technical advancement.

These embodiments were taken from *A Rational Approach to Air Pollution Legislation,* published by Air Pollution Abatement Committee Manufacturing Chemists' Association, Inc., 1625 Eye St., NW., Washington, D. C.

WHY LOSE MONEY with BIG, OVERSIZE COMPRESSORS?

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For more than a quarter century, the Smith Compressor has saved money for city governments. First, the Smith Compressor *costs less* due to its simple, compact design. The Smith Compressor costs *less to operate* due to its relatively slow operating speed. Lower maintenance cost, we repeat, *lower maintenance cost.* Imagine a modern, heavy-duty air compressor that any automotive mechanic can service *without special training.* Parts are readily obtainable from your nearest Chrysler dealer. Write us today —or contact your nearest Smith Compressor Distriibutor—to find out how our line of air compressors can make money for you.

Gordon Smith & Co., Inc.
425 COLLEGE STREET
BOWLING GREEN, KENTUCKY

New garbage collection equipment like this Heil Colectomatic unit has been a vital factor in Hammond's Vector Control Program.

Good Refuse Containers Come First

. . . in Hammond's city-wide sanitation program

By DR. D. T. RAMKER
Director, Health Department
Hammond, Ind.

CAN a heavily populated industrial city conduct a successful Vector control program without first experiencing "acute" conditions or imposing a hefty tax increase? Hammond, Ind. says *yes*. We launched an intensive two-year program last fall, and already have a positive campaign operating on various levels to control insects and rodents through improved sanitation practices.

Our first step was a "Garbage Can Selling Campaign" to encourage widespread public use of approved galvanized steel containers that could effectively handle the city's refuse storage, collection and disposal problem.

The program, initiated by the Communicable Disease Center of the U. S. Public Health Service, overcame public apathy by utilizing informative newspaper articles and pictures, public posters, pamphlets and stringent enforcement of Hammond's garbage disposal ordinance that specifies metal containers.

The current two-year program in Hammond is a cooperative effort in which the Hammond Health Department, the U. S. Public Health Service, the City of Hammond and the Indiana State Board of Health all participate.

Ralph Potesta, health department administrator, supervises all operations. The Public Health Service has assigned Dr. Maxwell J. Wilcomb, a sanitarian-biologist from its Communicable Disease Center, to develop and conduct the program. Federal participation also includes Dr. Wilcomb's supplies and a jeep equipped for mosquito and fly spray work.

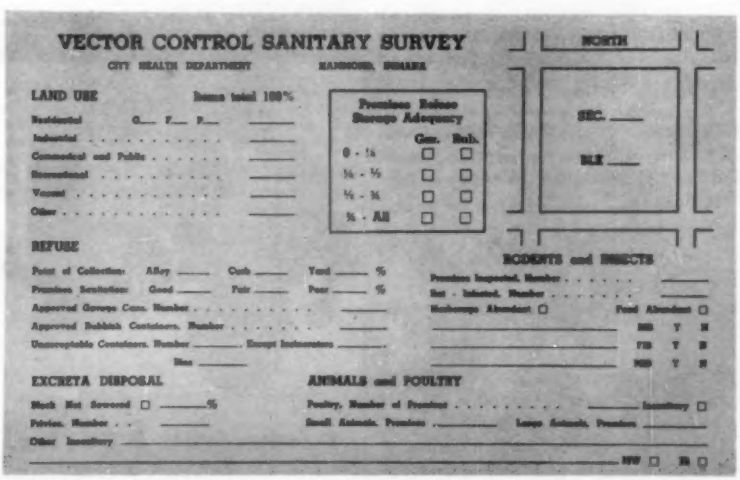
The city health department's Vector Control Supervisor John Riebe is also assigned on a full-time basis, and will continue to direct the necessary control activities as a permanent employee of the department after the two-year demonstration period.

The Indiana State Health Department has appropriated $1,500 annually for informative pamphlets and posters to explain the drive's functions and purposes. The city has assigned four men to handle the summer spraying.

Selling Campaign

Dr. Wilcomb launched a fall Garbage Can Selling Campaign in conjunction with Clarence Motz, commissioner of streets and alleys, and relied upon a strict city ordinance governing garbage disposal and rubbish burning.

Mr. Potesta called a general meet-


VECTOR CONTROL SANITARY SURVEY

CITY HEALTH DEPARTMENT HAMMOND, INDIANA

LAND USE Items total 100%

Residential G.___ F.___ P.___ ___

Industrial ___

Commercial and Public ___

Recreational ___

Vacant ___

Other ___

Premises Refuse Storage Adequacy

	Gar.	Refs.
0 - ¼	☐	☐
¼ - ½	☐	☐
½ - ¾	☐	☐
¾ - All	☐	☐

NORTH

SEC. ___

BLK ___

REFUSE

Point of Collection: Alley ___ Curb ___ Yard ___ %

Premises Sanitation: Good ___ Fair ___ Poor ___ %

Approved Garage Cans, Number ___

Approved Rubbish Containers, Number ___

Unacceptable Containers, Number ___ Except Incinerators ___

Bins ___

RODENTS and INSECTS

Premises Inspected, Number ___

Rat - Infested, Number ___

Harborage Abundant ☐ Food Abundant ☐

EXCRETA DISPOSAL

Stools Not Screened ☐ ___%

Privies, Number ___

Other Insanitary ___

ANIMALS and POULTRY

Poultry, Number of Premises ___ Insanitary ☐

Small Animals, Premises ___ Large Animals, Premises ___

NW ☐ SE ☐

An initial step in Hammond's Vector Control Demonstration Program was a thorough survey of every city block to determine refuse and garbage storage adequacy.

1. Use standard 20 to 32-gallon metal cans with tight lids and two handles.
2. Carefully DRAIN and WRAP all garbage.
3. Place all garbage INSIDE can and replace lid TIGHTLY.
4. Keep cans on suitable RACK or STAND.
5. Keep cans CLEAN and WASH them regularly!

Promotional material like this helped inform residents of proper environmental sanitation practices.

ing of all hardware dealers on October 4, 1957 in the Hammond Civic Center and explained the purpose of the campaign. Through adequate newspaper coverage, Mr. Potesta pointed out to residents that galvanized steel cans with close-fitting covers are the only rodent-proof containers available for refuse and garbage disposal.

Vector Control Program officials were faced with two unusual problems in Hammond. They found that many residents used open concrete bins, and collection crews spend many hours shoveling refuse into trucks. Many of the residents used large, heavy oil drums for garbage. In addition to being outlawed by ordinance, the bulky containers slowed down collection crews.

To combat illegal containers, Commissioner Motz authorized Hammond's two alley inspectors to tag unsatisfactory units with red "condemned" labels supplied by the Galvanized Ware Manufacturers Council. Mr. Motz then told collection crews not to pick up waste put in the "condemned' units, and when possible, to take the containers away.

Property owners who permit scattered refuse or appreciable amounts

Many residents had been using these open incinerators for storing and burning garbage until "cleanup" time came.

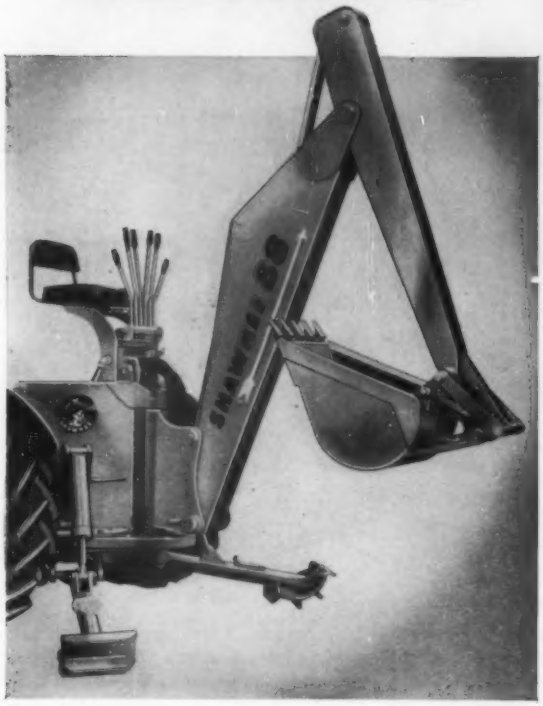
Wrapped garbage in galvanized steel containers neatly placed on raised racks helped ward off insect and rodent harborage.

of rodent harborage to accumulate, the garbage cans were adequate in

mit authorization of this plan with

NOW -- the *fastest* of them all

SHAWNEE 88



Ahead in design and performance . . .

considerably below in price!

A new FIRST in earthmoving economy-power. The all-modern SHAWNEE 88 digs with speed and stamina never before achieved in a backhoe so modestly priced! Unique "hidden cylinder" activates all-purpose, quick-detach bucket. See the new SHAWNEE 88—you'll never see anything to beat it!

180° Uninterrupted Swing
9'9" Dumping Height
12' Digging Depth
16'6" Reach

Presented through *your* tractor dealer

By
SHAWNEE
1947-U N. TOPEKA AVE.
TOPEKA, KANSAS

FULL DETAILS FREE UPON REQUEST

Douglas COLLAPSIBLE VOTING BOOTHS
1 to 5 Stall

Save Space
Save Expense

metal storage case holds up to 5 booths

Douglas Collapsible Voting Booths stand 6'2", width and depth both 28". Bright red, white and blue striped canvas front curtain. Booths easily extended and set up. Master stall collapses to 6'2"x2"x2". Steel construction, aluminum shelves. Above model available in all aluminum this year.

WE HAVE SUPPLIED VOTING EQUIPMENT TO THE MAJORITY OF LARGE CITIES IN THE U.S.A. DURING THE PAST 50 YEARS. WE ARE HAPPY TO ANNOUNCE PORTLAND, OREGON AND MULTNOMAH COUNTY, HAVE BEEN ADDED TO OUR LIST OF CUSTOMERS.

OTHER Douglas ELECTION EQUIPMENT

- Uni-Pack Collapsible Voting Booths
- All-Metal Folding Booths
- Collapsible Ballot Boxes
- Collapsible Election Tables
- Jury Wheels
- Rigid Ballot Boxes
- Voting Booth Lights

For further information, contact your local dealer or write for FREE catalog and prices to:

DOUGLAS MFG. CORP.
DEPT. H, Crete, Nebr.

Serving the 48 states, Hawaii and Puerto Rico since 1910

SIGNS FOR LIFE

Stop accidents before they happen . . . at school crossings, construction sites, stop streets, railroad crossings, dangerous curves . . . with Eastern Metal traffic control signs, warning signs, and special highway safety equipment. Of durable all-steel construction with weatherproof baked enamel finish. Over 2200 types and legends available.

Write today for full information and prices.

Eastern Metal
OF ELMIRA, INC.
Elmira Heights 1, N. Y.

of rodent harborage to accumulate are warned by letter and a second inspection is made within 15 days to see if the conditions have been remedied. If they are not, city crews bypass the property and legal action is instigated. City Ordinance 3022 provides for fines up to $300 and a maximum of 10 days in jail for anyone who uses illegal containers.

Cooperation

Hardware dealers cooperated with the city's drive by displaying special posters and conducting promotions of galvanized steel garbage cans. About 3,000 cans were sold the first three months of the drive, and a spring campaign is currently bringing sales closer to the 22,000 mark estimated in a survey conducted by Dr. Wilcomb and Mr. Riebe.

The pair devised a vector control sanitary survey blank and checked every block in Hammond to determine its refuse storage adequacy and certain other factors necessary in building an effective program.

Final tabulations of the survey revealed that more than 50% of the containers used in Hammond's residential areas were "improper and conducive to fly breeding." A total of 22,398 containers failed to meet standards, while only 21,159 were acceptable.

Before the Garbage Can Selling Campaign, only 552 residential blocks had a refuse storage adequacy of 75%. Statistics also pointed out that adequacy in 326 blocks ranged from 50% to 75%; in 104 blocks from 25% to 50%; and in 43 blocks less than 25% of the containers were acceptable.

Too Many Rats

The exhaustive survey of Hammond's sanitation facilities disclosed pointedly that the number of rats in the alleys is totally inconsistent with the city's overall rigid building standards. If possible, the city ordinance must be amended to require adequate wrapping of all garbage. The rodent problem can be eliminated if wrapped garbage is kept in galvanized steel cans on raised racks for twice-weekly collections.

In some sections of Hammond it took garbage collection crews (two collectors and a driver) from 45 minutes to an hour to move through one alley because each concrete bin required shoveling. There are 22 collection routes in the city, and 95% of the pickup is in alleys.

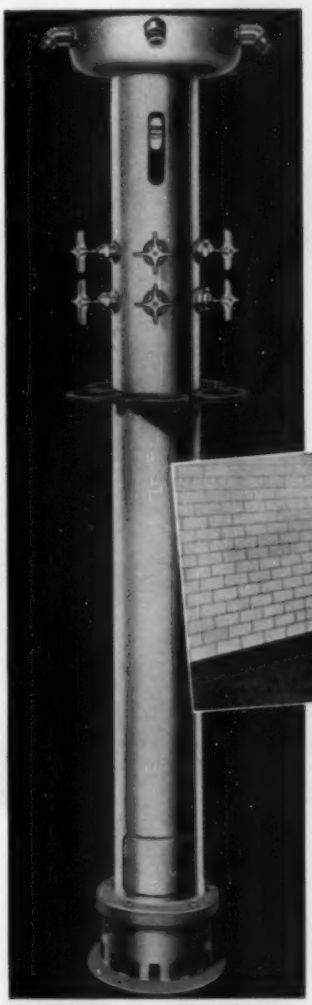
The survey revealed that 75% of the garbage cans were adequate in curb pickup areas.

The city has found it difficult to acquire landfill sites in the densely populated Calumet district, and some crews have had to make a 14-mile round trip. A new area closer to the city has been purchased and will go into operation soon. Several new trucks and a bulldozer will also speed up operations this year.

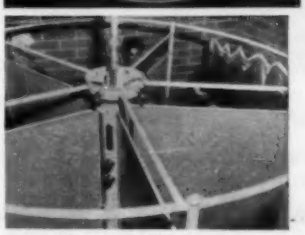
Mayor Dowling included twice-weekly collections in his campaign platform, and the efficiencies affected by the sanitation program will permit authorization of this plan with only a slight tax increase. Two pickups each week will eliminate the fly-breeding cycle and cut the rodents' food supply.

Public Informed

More than 40,000 circulars and pamphlets were distributed last fall by school children, grocery and hardware stores to "kick off" the campaign. The Galvanized Ware Manufacturers Council provides dealers with ample supplies of "health notice

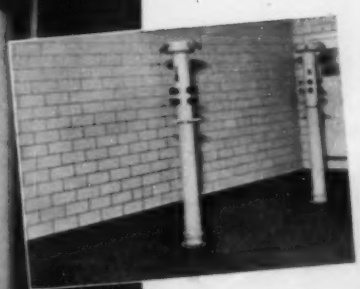


Bradley 5 Stall Shower with partitions and curtains



EASILY INSTALLED SHOWER FACILITIES

Just One Shower Column Provides Five Showers With or Without Separating Partitions



Bradley Columns placed in a partly walled-in room. Each 5-shower unit requires only one hot, one cold water and drain connection.

Bradley multi-person Shower Units are economical—each column provides for 5 showers or for 3 if placed against wall. They can be open or with partitions and curtains.

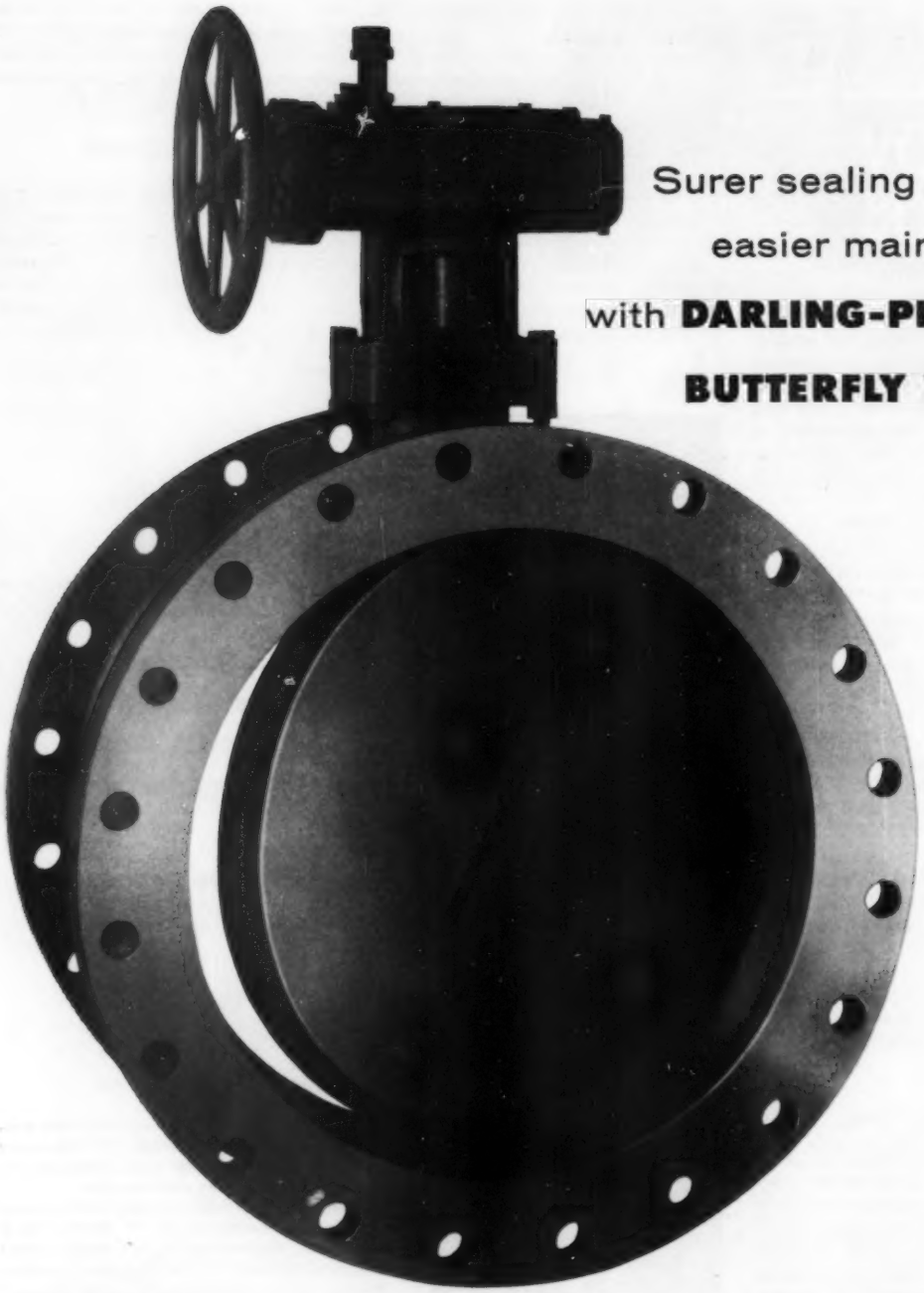
Yet each Column requires only three piping connections as compared to 15 needed for 5 conventional shower stalls. And each person has control of water temperature and volume.

Bradleys are the answer to shower problems. Easily installed in new or existing buildings. Get complete details, pages 22 to 26, Catalog 5601. BRADLEY WASHFOUNTAIN CO., 2333 W. Michigan St., Milwaukee 1, Wis.

Write for Catalog 5601

BRADLEY multi-stall showers

Distributed Through Plumbing Wholesalers



Surer sealing... easier maintenance with DARLING-PELTON BUTTERFLY VALVES

DARLING VALVES

Manufactured in Canada by The Canada Valve & Hydrant Co., Ltd., Brantford, Ont.

DARLING-PELTON butterfly valves are new in both principle and performance. They offer you new advantages!

For example, a continuous and adjustable rubber seating ring provides full 360° sealing. The disc itself swings on an axis eccentric to the centerline of the valve.

This principle not only makes surer, drop-tight shutoff possible, but also eliminates shaft sealing problems, permits easy rubber seat replacement or adjustment without removing shaft or operator, and requires less operating torque.

Get all the facts on this forward step in butterfly valve performance. Made to A.W.W.A. Specifications. Ask for Bulletin SLS-5708.

DARLING VALVE & MANUFACTURING CO.
Williamsport 10, Pa.

cards" that promote rodent and fly control by advocating the proper handling of garbage. The dealers cooperated with the health department by distributing the cards to their customers and mailing others to residents.

In addition to outlining proper garbage storage and disposal methods, the "health notice cards" listed the diseases that flies and rats spread. The cards also state: *Help prevent disease by starving rats and flies. Keep garbage in covered galvanized steel or other rust-resistant garbage cans.*

Long-Range Program

A long-range vector control plan, designed to organize and develop a comprehensive demonstration project covering all applicable phases of insect and rodent control including improvements in those phases of environmental sanitation having a direct bearing on insect and rodent problems, is currently under advisement by Hammond officials.

During the second year in Hammond we hope to shift emphasis from immediate emergency measures to positive planning and education. We expect to provide programs with slides and charts for school and civic audiences, and schedule a series of seminars for interested health officials in Indiana and adjacent Illinois communities.

Resurvey

Hammond will be surveyed again before the department makes recommendations to the City Council for municipal legislation. Certain amendments dealing with improper containers and the burning of garbage should be written into law.

Hammond posed a difficult problem for health officials because its sanitation problems were not yet acute and public apathy soon became apparent, but a concentrated, well-planned campaign has brought results through improved refuse storage, collection and disposal practices.

Utica, N. Y. Will Eliminate 21 Blighted Acres

Utica's Redevelopment Project No. 1, embracing 21 blighted acres, will be carried out by the upstate New York community with the aid of a $1,232,458 federal capital grant approved by the federal Urban Renewal Administration, according to John T. McKennan, mayor of Utica.

The downtown area, predominantly residential, is characterized by mixed uses and congestion. It will be cleared and redeveloped primarily for commercial and public parking uses. The 152 families now living thre will be offered relocation in decent, safe, and sanitary housing, as required by law.

Estimated net cost of the project is $1,659,987. This represents the difference between the cost of acquiring, clearing, and preparing the land for its new uses and the return from its resale at fair value. The $1,232,458 federal grant covers two-thirds of this deficit and includes an amount for aiding in the relocation of displaced families and businesses. Utica's contribution will cover the remaining one-third of the loss. The federal funds are authorized by Title I, Housing Act of 1949, as amended.

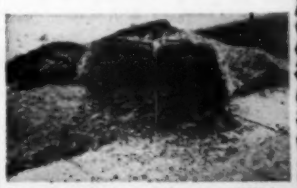
HERE'S THAT STUMP REMOVER THEY'RE ALL TALKING ABOUT!

The New VERMEER POW-R-STUMP CUTTER

Now you can remove the largest stump, to a depth of 10" below the ground . . . in a fraction of the time required under present methods. The Vermeer POW-R-STUMP CUTTER is the new machine that's really doing the job in parks, golf courses, cemeteries and cities all over the country. You merely back the unit over the stump, as shown above, set the powerful rotor blade in position and then rip the unsightly stump to shreds.

POW-R-STUMP CUTTER REMOVES STUMPS IN MINUTES . . . NOT HOURS!

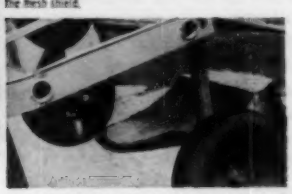
One man controls the entire cutting operation with three hydraulic cylinders. The Pow-R-Stump Cutter's 24 cutting blades move back and forth horizontally across the stump, ripping the stump one inch at a time.



From a stump to chips in minutes. Stump removed 10" below surface. Now you merely carry away the chips . . . add earth, seed or sod for a beautiful lawn.

Revolutionary • Safe • Simple • Economical

With the Pow-R-Stump Cutter in position over the stump, the operator then controls all cutting action . . . safely behind the mesh shield.



Powerful rotor blade (shown above) has already ripped half of the stump into chips. Saves hours of labor.

Write For Complete Information, Literature and Low-Price

You'll be amazed how many hours of back-breaking labor you can save with the POW-R-Stump Cutter. Quality-built and reasonably priced. Write for all facts now.

VERMEER MANUFACTURING CO., PELLA, IOWA

Although good results can be obtained by blade mixing, mechanical mixers are more effective.

Salt-Soil Stabilization

Properly prepared base means less maintenance on the unpaved road and longer life for a surface course

By ROBERT E. LUNDE
Engineer Manager
Mason County Road Commission
Scottville, Mich.

STABILIZATION of soils with an admix of salt is becoming increasingly important in street and road construction and maintenance problems. High-speed automobiles, increasing traffic density, and heavy trucks mean that a paved road is no better than the base which carries it, and that unpaved roads mean constant maintenance. Road builders and those responsible for maintenance are seeking ways of making roads more permanent, and this is especially true in our north country with deep penetrating frost conditions and high water tables.

For those who have not tried salt-soil stabilization or adopted it as part of their construction and maintenance program, it is hoped that the following information will create additional interest.

Actual experience points up six basic benefits of a salt stabilized road. These are:

1. The safety factor—loose gravel or stone is dangerous.
2. Low construction and maintenance cost—maintenance is reduced by 50% or more.
3. Smooth—it provides dustless riding surface.
4. It stops loss of road material by throw-off and dust.
5. It reduces frost heaves by lowering freezing point, prevents penetration of water from the surface and also minimizes action of capillary water because of the dense road mass.
6. Most important of all, salt stabilized road surfacing brings about the good will of the driving public and the cooperation of those whose duty it is to maintain the roads.

This is why we like them in Mason County.

In our situation, we use glacial gravel, and while it is not plentiful, it is the only road material available. Gravel will undoubtedly continue to be the material generally used in construction of bases for asphaltic

The finished product—a low cost, smooth road requiring a minimum of maintenance.

The kneading action of pneumatic type rollers fills voids with fine particles.

Mechanical spreaders distribute salt evenly.

An Aid to Longer Lasting Streets

pavements and for the construction of secondary and local roads. However, gravel should meet certain specifications to effect maximum density with a definite amount of fines, this to be added in the event there is a deficiency.

When stalilizing a base, we always keep in mind whether or not the road is to be paved; if it is, we reduce the amount of fines to a minimum. An excess of clay fines or binder soil has its effect on the capillary action of water, producing greater risk of frost boils. Therefore, if the road is to be paved, we keep the fines below 8%; if not, we will increase the fines to 15% maximum, depending upon the screen analysis. This increase improves compaction and helps in future maintenance.

Gradation of the material is important. A good screening for a gravel-surfaced road using material found in our glaciated area is as follows:

Passing	¾"	screen—90-100%
Passing	⅜"	screen—60- 85%
Passing	#10	screen—30- 45%
Passing	#40	screen—20- 35%
Passing	#200	screen— 3- 8%

If the wearing surface or top course is to be stabilized, the suggested depth is 4 inches, or more, on a stabilized base material.

Our practice is to add salt to the gravel at the rate of 12 pounds per cubic yard. This provides two tons per inch of depth per mile of 20-foot wide roadway. The salt, by physical action, retards evaporation and helps to maintain the moisture content in the soil, thus increasing the stability of the road surface. As moisture evaporates, small salt crystals form on the surface causing a crust which closes the voids and retards further evaporation.

Salt should be applied with a mechanical spreader for better distribution and then be blade-mixed; or a pass or two with a mechanical mixer, if available, is better still.

Clay of the right kind serves as the most effective soil binder and provides the essential percentage of 200 mesh material. Since clays vary, we consider their plasticity and cohesion to serve as a binder. To insure thorough mixing, the clay must be dry and pulverized. If the gravel does not contain enough clay, we add more before the mixing operation begins. We have used lime along with clay for binder, with excellent results.

Water should be available in quantities to permit wetting of the base and the stabilizing material; the latter to the point of holding its shape when compressed in the hand. The water serves as a bonding agent and puts the salt into solution. Two or three tanks of 2,000-gallon capacity or more, with spray bars, will serve this purpose. We use brine instead of water. The additional cost is low—evaporation during mixing is slow—and it gives extra salt content to the mix.

Construction Procedures

In or part of the country, proper drainage is the most important part of a road. It is essential that ditches be constructed so that free water in the subgrade be kept well below the surfacing. Since free water circulating through a soluble salt-treated stabilized surfacing material will remove the salt, it is necessary for the sake of economy of materials as well as good construction to make the surface as impervious as possible. Also, side drainage should be constructed to reduce free water in the subgrade to a minimum.

We always check and correlate the

Not much wider than a yardstick . . .

Here's a companion-model utility trencher, mounted on rubber tires — the Parsons 88 Trenchmobile®. It makes self-powered moves over city streets, highways, through traffic at travel speeds up to 12.6 m.p.h. — maintains fast "work-and-run" schedules. Trenchmobile digs 8 or 16 inches wide, at depths to 5 feet. Ladder and wheel-type Trenchliners are available for digging up to 6 feet wide, 19 feet deep.

Parsons introduces a NEW small 77 Trenchliner...

. . . It's only 3 feet-8 inches wide. Working height, with boom in digging position, is just 5 feet-8 inches. What's more, this little Parsons 77 Trenchliner only weighs about 6500 pounds for convenient trailer-transport from job to job. Small in size, but big in capacity, the 77 has a work range that will surprise you. For instance . . .

Digs up to 5 feet deep

It produces from 4.4 inches to 21 lineal feet of trench per minute, in 32 hi-lo digging speed selections. You get trench widths from 6 to 18 inches, *and maximum digging depth of 5 feet!* The tiny 77 is heavy-duty in every respect. It has positive down-crowd on telescopic ladder boom. Self cleaning, cast-steel buckets are equipped with Parsons "Tap-In" teeth. Shiftable spoil conveyor is instantly reversible for controlled discharge. Compact and maneuverable, the 77 turns within its own length — each crawler is independently driven, independently braked. Better check what this small utility 77 Trenchliner can do on service connections, small mains, underground cables, lighting systems, curb, foundation footings. Ask Parsons distributor for demonstration, or write to us today.

Mail today to: PARSONS COMPANY, Newton, Iowa

Send literature on: ☐ *77 Trenchliner* ☐ *88 Trenchmobile*

NAME .....

TITLE .....

COMPANY .....

DIVISION .....

STREET .....

CITY, STATE .....

PBUBAC

PARSONS® TRENCHLINER® *A division of Koehring Company*

depth of gravel on the road with the actual traffic count or anticipated load. Four inches of processed gravel should be the minimum depth on light-traffic roads. However, lack of funds forced us to stabilize roads with only two or three inches of rather poorly graded material on the surface. These have given good service. This allows us to prolong the life of the road and keep it in good condition until construction can be programmed and carried out. We have stabilized a mile of road in one working day with ordinary working forces. This includes placing the salt, scarifying the surface, mixing, wetting and the laying out. In most cases we let traffic do the rolling job for us.

Mixing

When material is in proper proportion, the gravel surface is ready for scarifying and blading. Several passes are necessary to get an even distribution of the material with the binder, salt, and water. An occasional pass of the water tanks improves mixing and prevents segregation of fine material. Some prefer mechanical mixer, such as a Seaman Pulvi-Mixer. We have such equipment and find it ideal for use on most soils. Two passes are usually considered to be sufficient.

After the material is thoroughly mixed and evenly windrowed on each side of the road, we wet the road base and bring in the material, alternating from side to side. We find it best to build up the material in layers from 1 to 1½ inches in thickness. The proper crown should be built in during this operation. For an unpaved road, a 5-inch crown is desirable for a 20-foot wide roadway. Excessive crown is a safety hazard.

The surface should be rolled if equipment is available. The pneumatic type is best for this work, for the kneading action fills the voids with the finer particles and salt film. Traffic tends to use the entire road surface if it has been rolled. This eliminates tracking and provides further compaction over the entire surface.

Plenty of traffic at this time is beneficial. The road will usually set and become hard and dry in a few hours. Vibratory equipment also does an excellent job of compacting salt stabilized material.

Maintenance

Now that construction is completed, the road will require some maintenance. A salt road requires an absolute minimum of blading, thus reducing costs about 50%. When the surface eventually becomes rough, we smooth it lightly with a blade after wetting by water truck or a rain. The material again hardens and the surface will be as smooth as it was originally. We never "dry-blade" a salt stabilized road, for it only loosens the aggregate and causes ravelling. A base course scheduled to receive a paved surface soon after completion generally will not require maintenance.

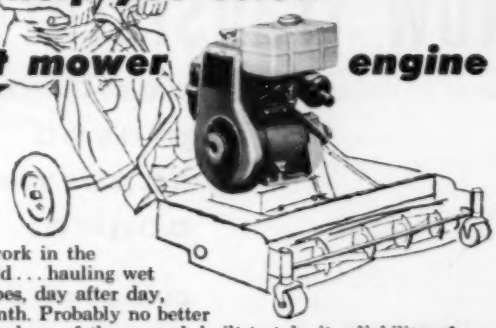
Horn-Honk Counters Help Muffle Noise

NINE-YEAR-OLD Robert T. Sataloff, son of Dr. Joseph Sataloff, is Philadelphia's first official horn-honk counter. Donald C. Wagner, Philadelphia's managing director, presented him with his official badge at ceremonies in city hall in April.

Dr. Sataloff is chairman of the Mayor's Committee on Noise Abatement in observance of National Noise Abatement Week last month.

How power performance on construction jobs...

...can help you select the right mower engine



Rough, tough work in the construction field... hauling wet concrete up slopes, day after day, month after month. Probably no better proof exists anywhere of the rugged, built-to-take-it reliability of single-cylinder Wisconsin Engines. The "Power Barrows" you see here are powered by the same style of engine powering so many of the heavy-duty mowers and tillers.

Users know that Wisconsin-Powered mowers often sell for a few dollars more... BUT this is only the *first cost*. The true test of a mower is the reliability and *economy on the job*. That's why mower buyers who hire men to do mowing, day after day, month after month endorse Wisconsin-powered equipment... where manhours represent dollars. When the equipment is Wisconsin-powered, servicing is at a minimum and *the manhours you pay for* become work hours.

Write for bulletin S-223, today, describing all Wisconsin Engines.

2,000 service stations... several near you!

WISCONSIN ENGINE POWER

first choice of professionals.

WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines

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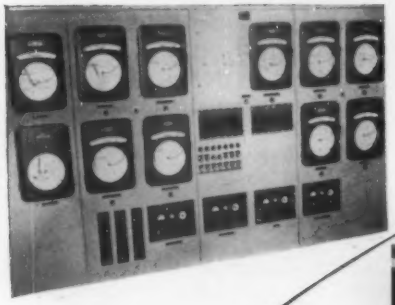


POSITIVE CONTROL OF MATERIALS IN MOTION B-I-F

Now transistorized!

performance-proved supervisory control

cuts costs 24 hours a day!

How TRANSISTORIZED SYSTEMS pay off:

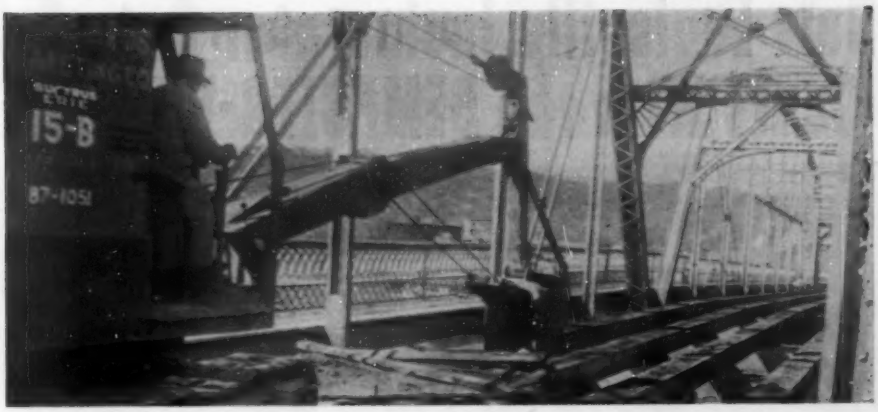
- **POWER SAVINGS up to 95%**
- **SPACE SAVINGS up to 50%**
- **MAINTENANCE SAVINGS . . . no tubes to heat up or replace**
- **INCREASED RELIABILITY . . new circuit design**
- **LONGER LIFE . . . transistor life up to 10 times that of tubes**

Investigate the *most advanced,* benefit-packed system ever offered for centralizing and remote-controlling the numerous, widespread operations encountered in modern waterworks and sewage treatment plants.

Performance-proved across the country, Synchro-Scan offers more "dollar-in-the-pocket" appeal than ever . . . will telemeter and control over a single circuit; provides compact components of "plug-in" design for ease of assembly, interchangeability, installation, and system expansion; *and now* adds the cost-cutting advantages of transistorized audio-tone transmission!

Request Bulletin 240-P2A for complete data. Write **Builders-Providence, Inc., 358 Harris Avenue, Providence 1, Rhode Island** . . . manufacturers of precision instruments and equipment for the *positive control of materials in motion.*

BUILDERS-PROVIDENCE
DIVISION OF
B-I-F INDUSTRIES
METERS FEEDERS CONTROLS



Once the old pavement was removed, a backhoe ripped up the flooring.

Bridge Resurfaced in 70 Working Days

Wooden deck replaced with corrugated metal plank and surfaced with asphalt

An "A" frame lowered the large sections of plank to the deck.

By PAT WILCOX
Commissioner of Public Works
Chattanooga, Tenn.

CHATTANOOGA'S Walnut Street Bridge, crossing the Tennessee River, was built around the turn of the century and designed for highway loads common to that era. It served all forms of vehicular traffic for about a half century. The ever-increasing size of motor vehicles has made it necessary during recent years to restrict the bridge's use to passenger cars only.

When construction of the new Tennessee River Bridge in Chattanooga got underway, we thought the Walnut Street Bridge could be abandoned since the new bridge together with the Market Street Bridge would be adequate to serve all traffic requirements. But no sooner had this plan been announced when residents from North Chattanooga using this bridge in going to and from downtown Chattanooga offered immediate and strong resistance. We then decided to recondition the bridge and continue to restrict traffic.

Steel Plank Selected

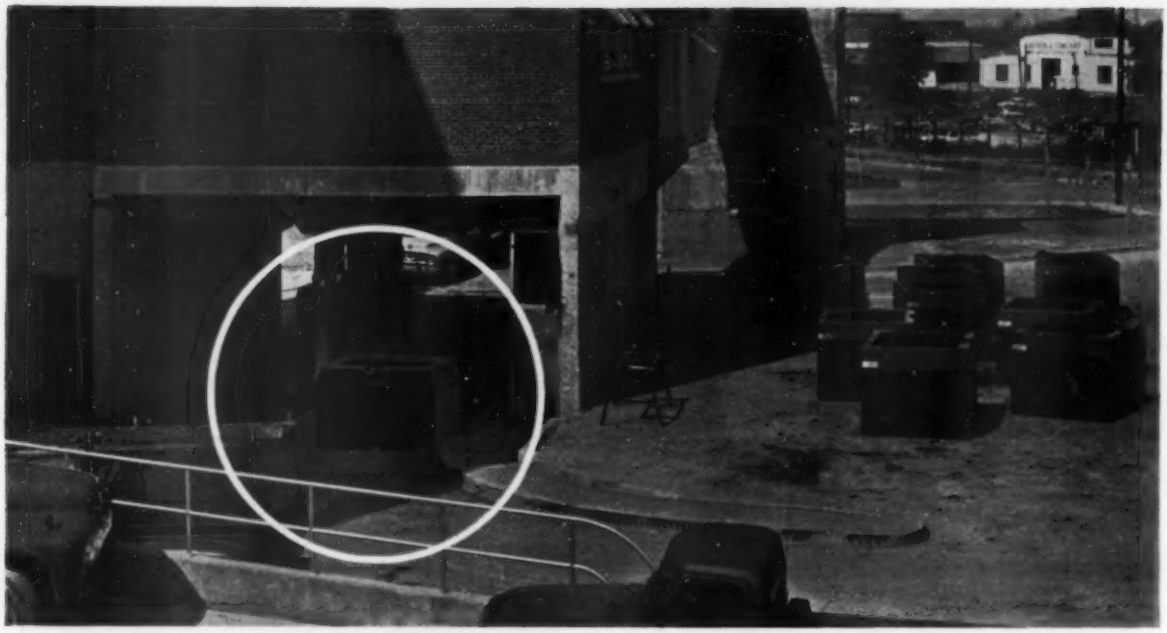
With this objective, City Engineer B. F. Barnes, A. F. Hedman, our consulting engineer, and the writer began studying the various methods

A workman carefully welds the bridge plant to the steel stringers through pre-punched weld holes.

This is how the floor looks with the planking in place and a portion of the first coating of asphalt applied, in the background.

and materials for doing the work. wood floor and subfloor. This con- John Marten Co. of Chattanooga

How Louisville Incinerator Cuts Ash Handling Costs With the DEMPSTER-DUMPSTER System



DEMPSTER-BALESTER Turns Scrap into a $200,000 Boost for Taxpayers

Metal salvage is an important function of the Louisville Incinerator. Cans are processed, stored in a hopper and carried by dragline to a DEMPSTER-BALESTER scrap metal baling press. When the charging box is full, powerful hydraulic rams compress the scrap into a tight, easy-to-handle bale about 14″ x 14″ x 20″. Bales are ejected onto a conveyor, which drops them into waiting cars on the railroad siding . . . yielding the city an estimated $200,000 annually from scrap sales.

Like the proverbial packing house, Louisville's Incinerator "uses all of the hog but his squeal." Dried sludge is sold for fertilizer, and scrap metal is baled at a profit. Even the residue ash is valuable for land fill and dump sealers.

That's where the DEMPSTER-DUMPSTER System steps in. Six-cu.-yd. detachable containers are placed under the ash residue hopper to provide temporary storage. The containers are filled on a 24-hour basis and stored out of the way until they can be emptied by the day shift. This pays off in fewer trucks and bigger savings. Ash is hauled to the disposal area and automatically dumped by the one-man-operated DEMPSTER-DUMPSTER.

Hats off to Louisville and its progressive Director of Sanitation, John Leake. We are proud to be a part of one of America's model incinerators.

If you are planning or building a municipal incinerator, write us today. One of our sales engineers will call without obligation and explain our system.

Mfg. by Dempster Brothers, Inc.

DEMPSTER DUMPSTER®

DEMPSTER BROTHERS

Knoxville 17, Tenn. Dept. AC-5

and materials for doing the work. We first planned to repair the flooring by using wood decking covered with asphalt, a method as used about five years ago. This time, however, we wanted more durability. We then considered Armco corrugated metal bridge plank and agreed that this would provide the most satisfactory method of repair.

The overall bridge length of 2,370 feet comprises a girder section 780 feet long, three truss sections of 320 feet each, and three truss sections of 210 feet each. The roadway design provides a clear width of 18½ feet for which 20-foot wide bridge plank is required. Total decking area comes to about 27,400 square feet.

Pre-Welded Sections

Although contracts were awarded in early 1956, a delay in delivery of structural steel stringers postponed actual construction until March 11, 1957. Seventy working days later the job was done.

After removing the original asphalt surfacing, the contractor used a Bucyrus-Erie backhoe to rip up the wood floor and subfloor. This consisted of 3- x 12-inch plank running diagonally in opposite directions. All timber stringers were replaced with 14 WF 30 steel beams intermittently spaced between the old 1533 with 6- x 10-inch timber spacers.

To conserve time, the decking contractor welded five sections of the bridge planking together in his shop and then delivered the larger sections to the bridge. These were put in place with the aid of a truck-mounted "A" frame and then welded to the steel stringers. Filling the plank corrugations with asphalt provided a smooth riding surface.

We selected Armco 10-gauge bridge plank for added strength and rigidity over the entire structure except for the north 100 feet. This section, being on a grade, is subject to unusual stresses caused by the acceleration and deceleration of traffic. Our consultant considered it wise to use 7-gauge steel planks over this section. Armco Flex-Beam guardrail safeguards pedestrian traffic on the girder section with rails used for such protection on both sides of the newly resurfaced bridge.

John Marten Co. of Chattanooga held the general contract. Thomas Brothers ripped up the old flooring and Lloyd Jones subcontracted the installation of the new bridge plank. Brown Brothers did the paving work. The Tennessee Metal Culvert Company supplied the bridge plank and assisted in the design of the new floor.

Cost of the entire project came to approximately $360,200 and was paid for out of Tennessee gas tax funds.

City Leases Bus Line

A TEMPORARY METHOD of providing bus service to Pueblo, Colo. citizens is now in effect according to the Colorado Municipal League.

Under the new arrangement, the city is leasing the buses to the company that it designates to provide services. During months in which the service shows a loss, the city will subsidize the operations. The subsidy may not exceed 8% of the money the company collects in passenger fares during the month in which the loss is incurred.

HERE'S the GREATEST TRAFFIC SIGN VALUE in AMERICA

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"EZ-ON" Faces, slip on right over present signs. Your signs are never out of service. Standard regulatory and warning copy—in red and white, yellow and black. They meet every need at ½ the ordinary cost!

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"EZ-ON" Faces are made in 24 and 30 in. sizes, octagon and diamond, of light gauge steel, flanged to easily clamp over old signs. Fully reflectorized, they serve night and day meeting all specifications for durability, brilliance and reflective qualities.

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Yes, 2 signs for only $5.00 . . . a special offer. A trial will convince that "EZ-ON" Faces are the answer to traffic sign costs and maintenance.

2 SIGNS FOR $5.00

SPECIAL OFFER

TRY THEM AND SEE FOR YOURSELF

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KEEP BUSINESS IN TOWN . . .

with Low-Cost CONTROLLED PARKING

PARCOA Systems Provide Unmatched Flexibility for Automatic Off-Street Parking

In city after city, PARCOA controlled parking systems are proving the answer for easing traffic congestion and building business for local merchants.

Low in first cost and operating without attendants 24 hours a day, these dependable systems offer widest flexibility of controls with choice of exclusive card-keys, coins, tokens or any combination. Savings in labor and service quickly amortise low cost. Ask for descriptive literature.

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Now Available . . . Automatically issues time-dated tickets where "per-hour" rates apply and for merchant-participation parking. No attendants required at entrance—only one cashier at exit.

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SALES AND SERVICE OFFICES IN MAJOR CITIES LISTED UNDER BOWSER, INC.

Municipal **P**ublic **R**elations

The City Tells Its Story

Edited by PAN DODD EIMON
Executive Director, Government Public Relations Association

Eight years of testing-time for Michigan MPR Unit

Dearborn's Research & Information Department Proves Worth to Civic Groups, Media, Industry

THE proof of the pudding, they say, is in the eating. The proof of what a public relations department means in a community is in the doing. And eight years is long enough to test how well the Dearborn, Mich. Department of Research & Information (R & I) is serving citizens, city officials, community groups, and the cause of municipal government generally.

The Dearborn department is a lot of things rolled into one. It's a city hall news bureau, an advertising agency, an information office, a producer of special events, a graphic arts department, an audio-visual center, a speaker's bureau, and the city coordinator for a never-ending series of civic affairs.

Here's what people dealing with and through Dearborn's R & I have to say about it as the department marks its eighth anniversary (1950-1958).

Industry: **Fulfills a particular need, namely to provide a continuing explanation to the citizenry as to what city government is thinking, doing, planning—and why.**—Robert J. Whan, Office of Civic Affairs, Ford Motor Co.

Media: **The Dearborn Research & Information Department . . . has saved us countless man hours in news gathering. . . . (It) provides us not only with official departmental news but also with timely releases of municipal services, commission appointments, mayoral proclamations, rundowns on fiscal reports, documentary information and background on the more complicated stories as the annual budget, as well as leads on stories about to break. . . . (They) . . . help us do a better job for the community.**—William A. Ross, editor and publisher, *The Dearborn Guide*.

Civic Groups: **Thanks for the part you played in making Michigan Week an outstanding success in the Village of Dearborn.** —Russel A. Swaney, chairman, Wayne County Michigan Week.

Your office was of great assistance and we sincerely thank you for the excellent cooperation . . . —Mack C. Cudillo, president, Dearborn Board of Realtors (national first-place winners for Realtor Week, 1957).

. . . our appreciation for assistance and cooperation in making the dedication ceremony . . . a success.—Evelyn O'Hara, secretary, Dearborn Federation of Civic Associations.

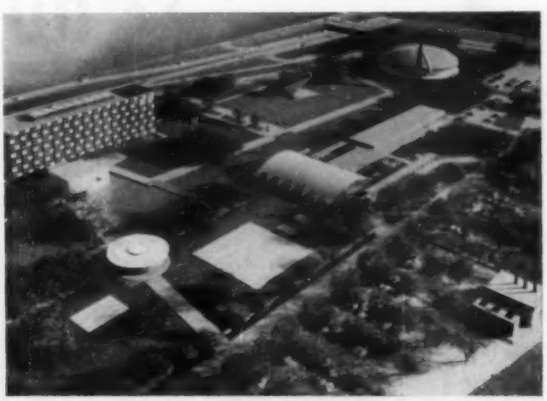
"Some" Major Successes

Former newspaperman Alex Pilch is director of R & I. He says that the aim of the department is:

To stimulate and maintain warm, friendly, understanding and cooperative relations between the people and their city government, and to keep more people better informed about their city government, about the unique public services and special characteristics of the city, the plans and progress of specific programs, and about Dearborn in general.

In its eight years, the Dearborn PR operation has triggered some major successes. For example, R & I undertook the "get-out-the-vote" campaign in 1952 which won the city a plaque for the best turnout of

The city helps organize and recruit for community events like Clean-Up Week. Director of Research & Information Alex Pilch (fourth from left) meets with citizens' group at city hall.



Visual aids, like this model of Dearborn's Civic Center, are used extensively in city public relations. R & I has produced a movie and colored slides-with-commentary on city work.

Parades and public ceremonies are planned by R & I. So, Director Pilch (right) is on hand to help Mayor Orville Hubbard (center) and Governor Williams when help is needed.

Leaflets and Tags are designed by R & I. The center publication is a bill stuffer. The tags were part of R & I's award-winning "get out the vote" campaign a few years ago.

voters in Michigan cities of its population class. R & I developed a bond campaign for a youth center which touched off donation of a 50-acre civic center site of which the youth building will be a part.

Director Pilch plugged so hard at reporting on the part of cities (and demonstrated sound public reporting techniques with the R & I operation) that the Michigan Municipal League undertook to boost reporting with a contest which it now conducts annually. R & I's program is sufficiently professional, from the viewpoint of journalism and public administration, so that the University of Michigan uses the Dearborn materials for a course in local government reporting for journalism majors and city manager trainees. And the R & I director is collaborating with a Notre Dame professor in a text book on municipal public relations based on the Dearborn experience.

Dearborn's news sense has resulted in some outstanding national publicity for the city. The city's experimental use of police dogs was carried twice on ABC-TV's "You Asked for It." Dearborn's retirement village plan for a Dearborn, Fla. attracted nationwide wire service and feature newspaper treatment. The mayor's famed "Think" sessions pulled a two-page spread in *Life* and an article in *Pageant*.

Routinely, the entire city government is R & I's news beat. During a year, more than 2,000 news stories and picture captions are written, processed, and distributed to local papers, the Detroit dailies, wire services, radio and TV stations, magazines and periodicals. Hundreds of news and feature pictures of city functions supplement the releases.

Director Pilch points out that R & I's "reliability of information and normal priority to newsmen and news developments has established the department as a central news source upon which all media have come to depend." But, he adds:

Dearborn's PR unit is the production point for all city-printed material. The city uses little paid advertising other than official notices—but whatever advertising is done, R & I writes it and designs the ad. Pamphlets, direct mail letters, booklets, leaflets—involving all departments—are conceived, laid out, written, and produced by R & I. Many of these printed pieces are annual editions, like the envelope stuffer that goes with tax bills. Color and art work are changed to give the message freshness and readability each year.

Because of the quality of printed material sent from city hall is some citizens' only look at city government, R & I keeps a watchful eye over all printing done by any department—from personal calling cards to bulky code books. A uniformity of style, consolidation of forms, elimination of dry officialese, and a high quality of printing results from this procedure.

Keep Citizens in Foreground

A main task of R & I is to remind citizens, constantly, that they are participants in city government in Dearborn. City-sponsored special events, Michigan's "Exchange of Mayors" Day, the annual Clean-Up, Paint-Up, Fix-Up Week, community parades, dedications, and public ceremonies are events for which the PR unit is responsible.

The department coordinates the city's part in community-wide activities such as Memorial Day parade and ceremonies, Red Cross, United Fund, Cancer, Polio, and YMCA campaigns. Help in planning, preparation, publicity, and production is provided by the PR office.

Speakers on city government are booked through R & I and, recently, the department has taken 2-inch x 2-inch transparencies on all phases of city work. These colored slides are used by speakers to supplement their remarks.

A movie, 20-minute city recreation show with commentary, has been produced by the department. It is the first of a planned series of such movies featuring various city operations. And a slide show, with taped sound, has been made by R & I.

The Research & Information Department in Dearborn is set up by ordinance and is an established unit of the city government. The director is appointed by the mayor and works at a policy level with other administration-appointed officers of the city.

R & I has its own office and its own budget. For 1958, it's exactly $36,523. Of this amount, a little over $29,000 is for staff salaries (director, assistant, artist, and secretary), $3,000 for the annual report, $2,500 for other publications, and a shade over $2,000 for office supplies and equipment, car and travel expenses, and "contingencies" (for reception and entertainment of official city guests).

Separate engines mounted on Santa Monica's refuse collection units permit packing of refuse while truck is under way.

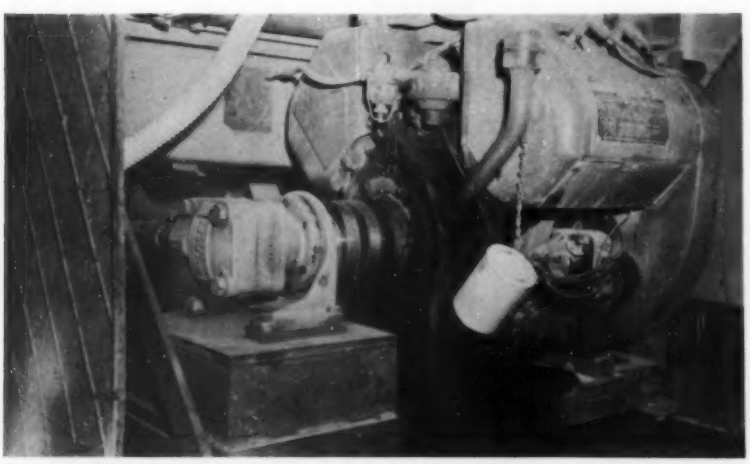
Santa Monica steps up refuse collection service by installing . . .

Auxiliary Power Units For Refuse Packing

By M. B. GENTILLON
Assistant Director of Public Works
Santa Monica, Calif.

CLYDE FITZGERALD, former assistant sanitation superintendent of Santa Monica recently authored an article entitled, "We Lowered the Cost and Improved the Service." (THE AMERICAN CITY, p. 126, August 1957). In that article, he briefly mentioned our use of auxiliary engines on refuse packers to speed up collection service. Numerous requests for more information on the subject led to this detailed discussion.

About two years ago we purchased our first packer-type refuse collection equipment. This equipment had a conventional hydraulic gear pump connected to the truck power take-off at the transmission. Our plan—designed to save many valuable hours of loading time—called for packing the refuse while the truck was moving between pick-ups, and while it was at a standstill. This meant the rear man should be able to actuate the hydraulic packing system at any time, and it also required having the power take-off engaged during the operations.



A close-up view showing how the gasoline engine and directly connected vane-type hydraulic pump are mounted onto the garbage collection trucks.

This system, however, proved mechanically impractical and unsafe. When the rear man pushed the hydraulic actuating lever while the truck was under way, the actuating gas throttle control would take over speeding up the truck engine to governor speed of about 2,000 rpm. The driver, not being forewarned, had considerable trouble in handling the truck, as he had no control over the gas throttle. The truck acted as it would with the gas throttle stuck in an open position. This, to say the least, was far from safe operating procedure.

We also found that shifting gears with the power take-off engaged overloaded the transmission, and gears clashed. Keeping the power take-off in gear while operating the truck placed excessive strain on the transmission and led to frequent and costly repairs.

Either the problem had to be solved or we would have to operate in the time-consuming standard manner. At this point, M. M. King, our director of public works, suggested using a separate engine to operate the packing mechanism. With this idea in mind, we went to work on the problem.

At first, we used a Model VG4D Wisconsin Engine with a gear reduction system to drive the gear-type hydraulic pump furnished with our Leach Packmaster collection bodies. The gear reduction is necessary if a gear-type hydraulic pump is used. This unit worked very well,

A-W Super 88 with torque converter, owned by South Whitehall Township, Lehigh County, Pa. Machine is shown fine-grading road prior to surfacing.

"A-W's all-wheel drive and all-wheel steer give top performance on every grading job"

says Pennsylvania township official

"After seeing an A-W working in a nearby township," says Joseph Duld, Jr., Chairman of the Road Board of South Whitehall Township, Lehigh Co., Pa., "we were convinced that it had everything we were looking for in a grader. Now, after a year of operation, we are more sold on the machine than before. The A-W's all-wheel drive and all-wheel steer give top performance on every grading job.

"We find that it works very well on washboard roads. After scarifying, we offset the grader and get a very smooth surface without tire marks. Very good at sloping and trenching, too. You can stay on the road for maximum traction, and, by swinging out the blade, do top-notch work.

"A-W's all-wheel drive, gives you extra working power at the blade, keeps you out of trouble in the worst kind of going. With live, climbing power in front and rear, you never get stuck.

"The A-W has been very inexpensive to operate. In spite of the fact that it has been kept very busy on our 100-mile network of roads, we have spent only about $50 on maintenance during the year."

Get the complete story on these graders that are built to outperform. See your nearby A-W distributor—he will be glad to arrange a demonstration for you at your convenience. Or write us today for more information.

Austin-Western CONSTRUCTION EQUIPMENT DIVISION, AURORA, ILL.

BALDWIN · LIMA · HAMILTON

Power graders • Motor sweepers • Road rollers • Hydraulic cranes

BALDWIN BLH LIMA-HAMILTON

KENNEDY VALVE has a complete line of A.W.W.A. Standard Gate Valves . . .

. . . that conform to A.W.W.A. specifications in all respects

FIG. 56

- Inside Screw
- Non-Rising Stem
- Parallel Seats
- Bell Ends

FIG. 571X

- Inside Screw
- Non-Rising Stem
- Parallel Seats
- Mechanical Joint Ends

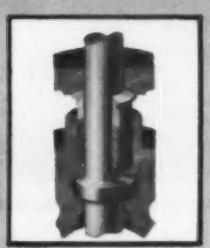
FIG. 561

- Inside Screw
- Non-Rising Stem
- Parallel Seats
- Flanged Ends

FIG. 566

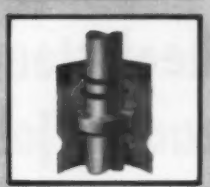
- Outside-Screw-and-Yoke
- Rising Stem
- Parallel Seats
- Flanged Ends

Construction features . . .



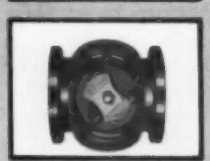
Conventional stuffing box

with adjustable gland has ample space for packing that conforms to Federal specification HH-P-106c. The bottom face of the stuffing box flange is faced smooth to form bearing surface for stem thrust collar.



O-Ring seals

once installed no adjustment of any kind is required. The top O-Ring is the dirt seal and the bottom O-Ring is the pressure seal.



Operating nut

is Higher Strength Cast Iron. The base flange, with arrow indicating direction to open, is shaped to permit access from ground surface to adjust gland nuts with an extension socket wrench.

KENNEDY A.W.W.A. Standard gate valves are designed specifically for use in water works systems. Conforming to A.W.W.A. Specifications, in several particulars these valves exceed these standards of strength and refinements of design.

While A.W.W.A. Specifications cover only bell end and flanged end non-rising stem valves, the KENNEDY line also includes outside-screw-and-yoke valves and a wide variety of pipe connections including: Bell Ends, Flanged Ends, Mechanical Joint Ends, Universal Pipe Ends, Asbestos Cement Pipe Ends, Screwed Ends, Ring-Tite Pipe Ends and Spigot Ends.

In addition to standard features, KENNEDY A.W.W.A. Valves have reduction gearing, gear cases, by-passes, indicators and rollers, tracks and scrapers available on 16" and larger sizes. Gearing is always furnished on 30" and larger valves.

KENNEDY VALVE MFG. CO.
ELMIRA, NEW YORK
VALVES
FIRE HYDRANTS

• WRITE TODAY FOR A.W.W.A. BULLETIN 561

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1306-12 South Canal St. Chicago 7, Illinois	161 Sixth Avenue New York 13, N. Y.	3215 Western Avenue Seattle 1, Washington	260 Tenth St. San Francisco 3, Calif.	3051 Lynhurst Circle S.W. Atlanta, Georgia	5060 Este Avenue Cincinnati 32, Ohio

• SALES OFFICES IN PRINCIPAL CITIES •

but the noise level of the gear reduction and gear pump was much too high. Citizens asleep at collection time were awakened by the noise and soon registered complaints. One other disadvantage of the gear reduction was a loss of efficiency caused by friction loss in the reduction system.

To overcome these objectionable features, we next tried a 300 series Vickers vane-type hydraulic pump connected directly to the auxiliary engine. This power unit turned out to be most satisfactory. After almost two years of service we can report very little trouble, and that experience has been minor. We have had no problems with the vane-type pumps.

Simple Installation— A Time-Saving Feature

Connecting the gasoline line to the truck and the starter to the truck battery permitted us to buy the auxiliary engines with magneto and starter as the only accessories. We replaced, with a velocity-type unit, the governor furnished with the engines. The exhaust pipe connects with the exhaust stack of the truck engine, which goes up vertical behind the cab. Installation of the vertical truck stacks resulted from complaints by the rear men that truck exhaust caused considerable discomfort.

All of our packer-type collection units are now equipped with separate engines, permitting us to save considerable time by packing the load while under way. Besides increased efficiency in operating time, we have also noticed a slight reduction in fuel consumption.

New Units Equipped with Automatic Transmission

Recently the City of Santa Monica purchased 7 additional packer units mounted on G-800 Ford trucks equipped with automatic transmission. Our specifications for these units included an alternate proposal calling for the power units to be furnished and installed by the successful bidder. We accepted this alternate on the lowest bid, for the price quoted was less than our cost of approximately $800.

Several refuse collection body manufacturers became interested in our work, and at least one manufacturer has developed a collection unit equipped with an auxiliary engine. This unit was displayed at the Philadelphia American Public Works Association convention last year.

GURLEY

INSTRUMENTS FOR POLLUTION CONTROL

Now—Record Wind Velocity in Any of Three Units

The Gurley Universal Anemometer reads wind velocity—important factor in controlling air contamination—in kilometers per hour; miles per hour; or knots. The three units can be used interchangeably. A simple switch over a calibrator changes the instrument's method of recording from one speed unit to another. The indicator pointer instantly adjusts to the correct reading for the unit selected. The Gurley DC Anemometer is wind-powered...requires no outside power to indicate and record velocity. Accurate within 2% at velocities from about 2 to 100 miles per hour, it is frequently used to control other equipment.

Gurley Anemometers are in wide use at municipal and industrial pollution control laboratories, airports, weather stations, oil refineries, in homes and at shore installations. Other Gurley Wind Instruments for pollution control stations include: Wind Direction Instruments, Wind Velocity and Direction Recorders and Pilot Balloon Theodolites. *Write for Bulletin 6000.*

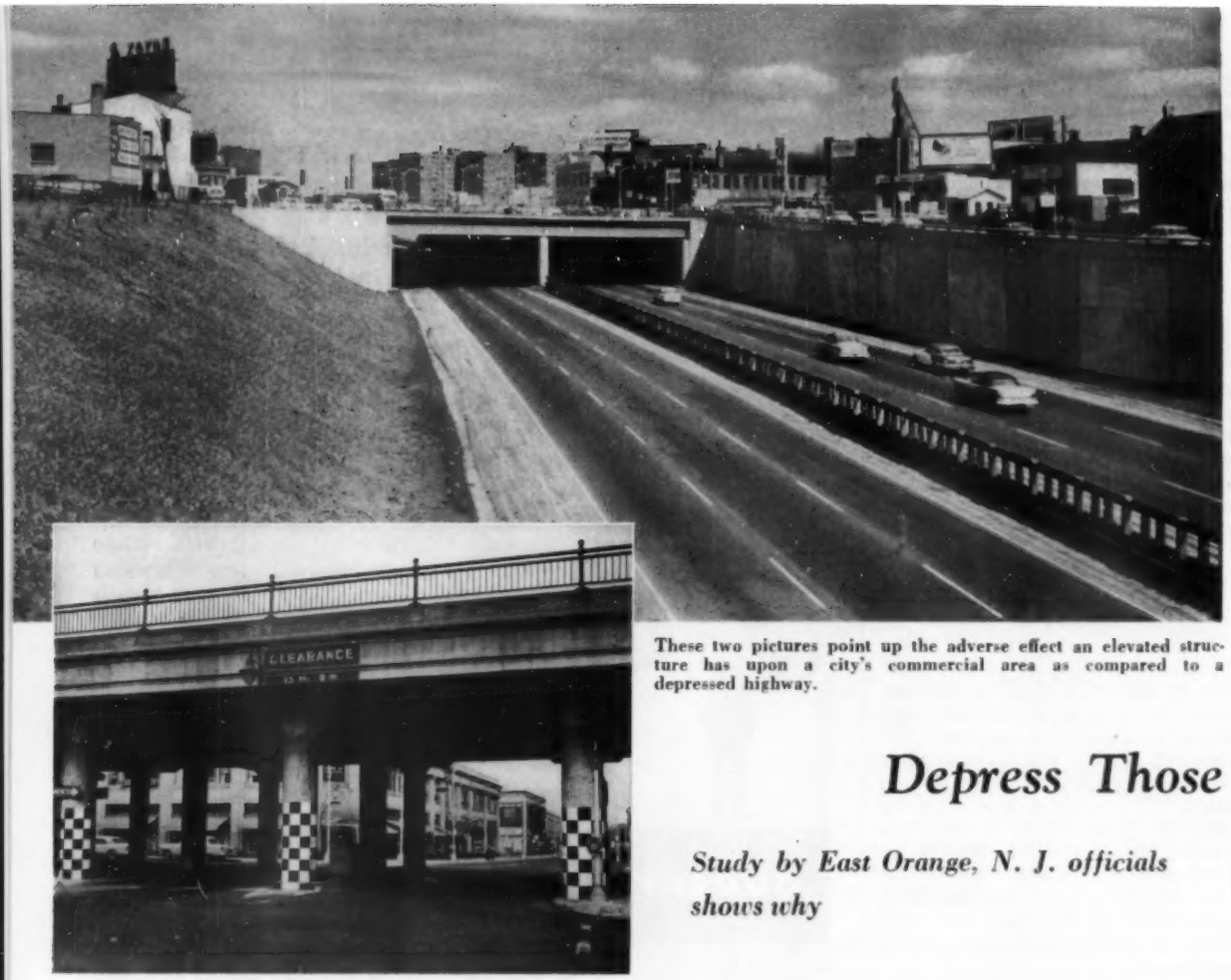
Current Meters, Water Level Recorders Reveal Water Conditions

The study of flow and level of water are two basic steps in controlling pollution of streams and other waters. The basic flow measuring instrument is the Gurley Current Meter, in use in federal, state and municipal bureaus for 70 years. Gurley Current Meters are available in a variety of outfits for use by overhead-cable suspension...wading-rod suspension...exploration and survey parties. Gurley's "Price Pattern" instruments can be supplied in either fresh or salt water models. There is also the "Pygmy" for shallow streams, flumes and canals.

Gurley Water Level Recorders make continuous graphic records for an entire day or week. Float-operated, simple in construction and operation, they are widely used in reservoirs, sewers, sewage disposal and hydro-electric plants, and supplement irrigation and stream gaging measurements. For details on these and many other Gurley Hydraulic Engineering Instruments, write for *Bulletin 700.*

Other Gurley Instruments to aid you in pollution studies include: Densometers for measuring porosity, air-permeability and air resistance of samples; Permeometers for measuring air flow through samples. *Write for further information.*

W. & L. E. GURLEY, 527 Fulton St., Troy, New York
Instrument Makers Since 1845



These two pictures point up the adverse effect an elevated structure has upon a city's commercial area as compared to a depressed highway.

Depress Those

Study by East Orange, N. J. officials shows why

By HARRY A. TAYLOR

THE multibillion dollar federal Aid Highway Program, by far the nation's biggest peacetime undertaking, has but one basic purpose: to expedite transportation to and through many of our cities. This is indeed essential, but from an esthetic and long range economic view, what will it do to some of these cities? Present plans for Project FAI 105 provides a glimpse into the future—and gives one cause for alarm.

The designation FAI 105 refers to the East-West Freeway traversing a 12-mile strip through the Northern New Jersey communities of East Hanover Township, Roseland, Livingston, West Orange, Orange, East Orange and Newark. It is one of the first projects of the present federal aid program to pass through a heavily populated area. As such, precedent set here can, and probably will be, used elsewhere. Consequently public officials and private citizens alike in the cities affected by this giant program will be very interested in the controversy surrounding this northern New Jersey project.

The controversy stems from the government's present plan to make this an elevated structure through the communities mentioned. Almost to a man, citizens of the area involved want the freeway carried below street level. East Orange has already experienced the effects of an elevated structure (the Lackawanna Railroad elevated in the 1920's) versus those of a depressed structure (the Garden State Parkway constructed several years ago). Visions of a new Chinese wall dividing these towns haunts city planners, engineers, politicians, homeowners, alike.

Pros and Cons

Arguments advanced against a depressed type highway boil down to the following four points:

1. Snow could not be plowed off a depressed roadway but must be scooped up and hauled away.
2. Drainage on a subsurface highway would be costly, requiring pumps about every 300 feet to keep the road dry.
3. A depressed roadway limits emergency transportation capabilities. Disruption by atomic blast might leave the artery flooded, with no means of pumping out the water.
4. High construction cost: estimates for the various types of construction for the northern New Jersey project are as follows:

Landfill	$23.8 millions
Steel Viaduct	39.1 millions
Depressed	45.7 millions

Total cost for the freeway, including land acquisition, is placed at $120 to $130 million.

Our answers to these arguments are basically as follows:

1. Snow is simply plowed onto the shoulders of the roadway, not removed. Example: the Garden State Parkway.
2. Drainage is a local problem, and in some cases ground water, terrain and other conditions may rule out depressed construction. With respect to the case in question,

EDITOR'S NOTE: Mr. Taylor, mortgage banker and realtor, is chairman of Mayor W. M. McConnell's (East Orange, N. J.) Committee for a Depressed Freeway.

GAME-TIME DIVING TRAMPS

Urban Expressways if at All Possible

Elevated highways (above) serve as a solid barrier bisecting a city; whereas depressed roadways (top) eliminate the hemmed-in feeling and do not obstruct light and air.

indications are that gravity connections can be made all the way to a nearby river.

3. The lateral shock wave of an atomic bomb, or other blast, would be less damaging to a depressed structure than an elevated one. A direct hit would certainly damage an elevated structure and render it useless.

4. Certain evidence indicates that depressed freeways may actually cost less than elevated ones.

With respect to cost, Detroit has found from actual experience that elevated construction is equal to, or greater than, the depressed type. A comparative study of the cost of elevated versus depressed construction on a new project, with estimates based on actual construction prices from other projects, shows that the elevated type will be considerably more costly than the depressed type.

Other Considerations

So much for surface facts. What about the elements of deeper significance coloring the viewpoints of the citizenry and its leaders? Is it, they are asking, the design of the federal grant to produce ruinous effects of a lasting nature to cities and towns through which these highways must pass? Town fathers in this area are conditioned to the loss of millions of dollars of assessed valuations, or ratables, but they are adamant in their view that the remaining property values must be preserved and the status of the cities maintained as first class communities capable of looking forward to the greatest degree of growth and prosperity.

Again, it is interesting to examine the rationale of cost. Shall we accept with equanimity the position that cost should be the sole motivating influence? Or should the town or city express its alarm over obstacles that would largely nullify existing programs for the preservation of property values as well as undertakings now in progress for enhancing the beauties of our cities? Moreover, if the federal authorities should fail to head such a reasoned plea it will set a precedent contrary to the trend elsewhere in the nation.

The following opinions and quotations by some of the nation's out-

standing highway engineers set forth

ment sections will be used only

first stage of construction consists

GAME-TIME DIVING TRAMPS

The Modern Touch For Modern Pools

It's the bounce that counts and Game-time Diving Trampolines will keep both adults and children happy by adding fun and excitement.

And they are safer, too—especially for the young paddlers and those learning to dive.

Cut maintenance—eliminate installation costs—with these smart diving tramps of welded tubular steel with Nylon beds.

The Hi-Boy (illustrated) becomes a permanent fixture with no installing. Has 40" x 40" frame and 18" x 18" Nylon bed and heavy steel springs.

The Lo-Boy has a 36" x 36" frame and 14" x 14" Nylon bed with rubber trampoline cables. Portable or for permanent mounting on pool deck or floating raft.

Optional finishes—aqua green enamel, zinc or chrome plated.

TRAMPOLINES

Designed for both indoor and outdoor use are also now available from Game-time.

8 models in 5 bed sizes—7' x 14'; 6' x 12'; 5' x 10'; 4' x 8'; 3' x 6'.

Game-time Trampolines are quality-built and of latest design. "Champion" and "Challenger" models meet all A.A.U. and Inter-Collegiate specifications.

Write today for literature and prices on these Diving Trampolines, and other Game-time pool, locker and playground equipment.

MARK OF QUALITY

Game-time, inc.

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Wholly owned subsidiary of Simpson Manufacturing Co.

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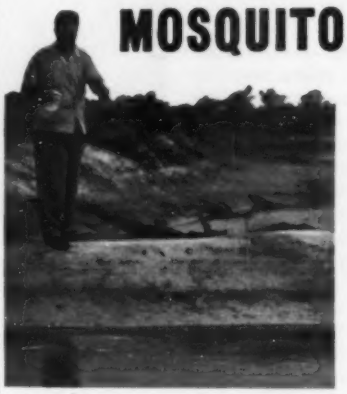

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standing highway engineers set forth this trend and point out the reasons for it:

E. C. Keane, consulting engineer Boston, Massachusetts:

Because of the possibility that an elevated structure in Boston might tend to create a "Chinese Wall" and retard future development, a high level decision was made to place the expressway underground even though this increases the cost by several million dollars.

J. Robertson, assistant city engineer City of Seattle, Dept. of Engineering:

The choice of whether a section of the freeway would be a depressed or an elevated roadway, of course, is, to some extent, dictated by the topography encountered in the particular area. In general, the freeway through Seattle, extending about fifteen miles through industrial, business and residential areas, is . . . depressed.

Frederick T. Thorpe, chief engineer and surveyor, City of Philadelphia Department of Streets:

The depressed highway is preferable through the densely populated urban areas. We are in general agreement that, wherever economically feasible and sound from the standpoint of prudent engineering, the depressed limited access facility is the least damaging to abutting properties in the densely populated areas of the city, other control factors being equal.

Russell M. Brown, engineer of Metropolitan Surveys and Studies State Highway Department of Indiana:

It is the policy in Indiana to build depressed urban freeways as far as possible because:

First, they facilitate the construction of grade separation structures at the major streets with a minimum disruption of existing grades of these streets.

Second, they provide the most pleasing appearance and avoid the objections of appearing as a barrier to split sections of the city they traverse. Embankment sections because of their elevation above the natural ground require special landscaping and other types of treatment to minimize the effect of a barrier.

In those cases where major separations are sufficiently far apart, it is desirable to keep the freeway near the normal ground line and balance the grade at separations.

The proposed interstate system of approximately 27 miles inside the City of Indianapolis has been planned to use the depressed section or sections at near ground level, at every feasible location. The embankment sections will be used only where stream crossings or drainage conditions leave no alternative. In the Calumet area of Indiana it would not be generally feasible to build depressed freeways because of ground water conditions.

Alfred Berarducci, assistant city engineer, City of Detroit Highways and Expressways Department of Public Works:

The City of Detroit has been engaged in the construction of expressways (or freeways) since 1947. Our first stage of construction consists of 24 miles, which is comprised of two routes through the city. The entire length of these two routes is being built as a fully depressed type, with the exception of a section, ⅝ of a mile in length, on the Edsel Ford Expressway, which section is elevated.

Early in our deliberations, we eliminated the grade expressway type, because of the obvious impossibility of providing the necessary frequent grade separations between the expressway and the major street cross-

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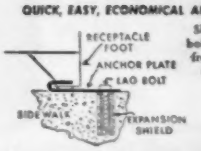

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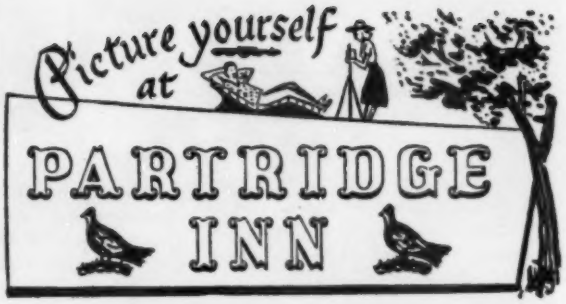

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(*covering snow removal, street cleaning, refuse collection and disposal, street construction*)

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ings which would be required. We eliminated the method of passing the crossing streets over or under the expressway because of the damage to these crossings streets and the abutting property. Thus, it was a question of elevated versus depressed. Except in rare instances, the elevated type was discarded because:

First, it has a depreciating effect on abutting property, even though parallel service drives are provided at grade level.

In spite of all the esthetic treatment that can be added to elevated structures, there will always be objections from nearby property owners due to its appearance, and the psychological effect it has on the value of abutting property.

Second, it furnishes a source of nuisance and danger, since the areas under an elevated must be crossed by either vehicles or pedestrians. Even though these areas may be well lighted, the danger to pedestrians and vehicles is always present. Other areas under an elevated, not open to vehicular or pedestrian traffic, are always a source of nuisance because of the isolation which results. These are always areas where crime can originate and breed, and other nuisances can develop.

Third, ramps from an elevated structure, both entrance and exit, are always in the wrong direction. In leaving an elevated, a ramp is on a downgrade. This causes an acceleration for traffic, which is contrary to the results desired prior to entering the surface street system. Upon entering the elevated, where maximum acceleration is desired in order to enter the fast moving traffic lanes, the ramps are on an upgrade, which results in a deceleration of vehicular traffic. This, too, is contrary to the type of operation desired.

We are not far enough advanced on other stages of our expressway construction, which will eventually total some 120 miles. However, all indications point to the fact that our original policy will be adhered to, in that expressway construction generally will be of the depressed type, and, only in rare instances, where no possible damage can affect abutting properties or neighborhoods, can the elevated type be considered.

Some Examples

Examples of the effect of elevated versus depressed structures can be found in many communities. Elevating the Lackawanna Railroad through East Orange in the 1920's had an immediate downgrading effect on ratable valuation of properties and buildings adacent to the structure in both residential and commercial areas. Since then little has been done to eliminate sore spots or generally improve the area.

On the other hand, when the depressed Garden State Parkway was built several years ago, a different condition resulted. Although the program did have a depressing effect on the ratable value of adjacent properties, it was less than one would expect had the structure been elevated. Of more importance were the later developments. Areas along the roadway once contained a smattering of private residences in relatively poor condition. These are being replaced or improved, and the area in general is filling up with garden apartments that not only increase the value of these lands but eliminate the possibility of future slums.

Thus, the arguments favor a depressed roadway against an elevated structure. Even though first cost might be higher, and this is not necessarily the case, the long time cost will be less. Of more importance is the preservation of existing good areas and the opportunity to improve poor areas traversed by the freeways.

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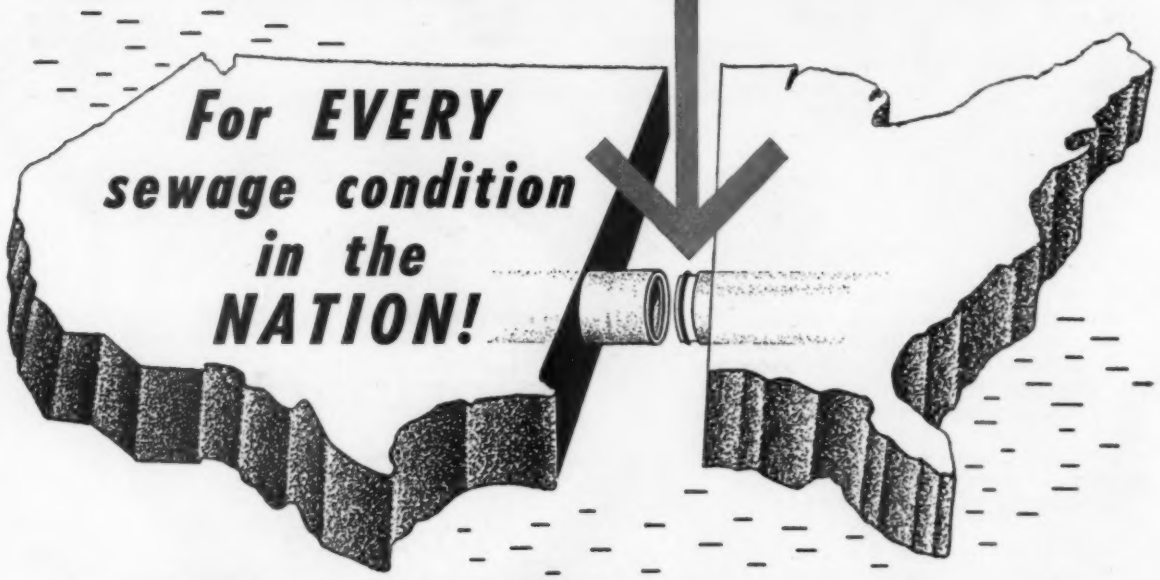

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Present planning assures future activity in . . .

Proposed Water And Sewage Construction

An "American City" staff study of water and sewage works activities in the planning stage.

ARIZONA

THE Arizona State Department of Health reports greatest activity in the field of sewage collection and treatment. Phoenix alone is planning major water works improvements. Planned activities in the sewage field are as follows:

Community	Population Served	Type of Project	Estimated Cost	Status
Phoenix	192,000	Trunks and Interceptors	$1,690,000	Ready for bid
Tucson	75,000	Treatment plant enlargement	1,560,000	Planning
Casa Grande	8,500	Plant and outfall	107,400	Ready for bid
Avondale	4,800	Plant and outfall	278,000	Planning
Winslow	8,300	Plant and outfall	400,000	Ready for bid
Sanitary District No. 1 of Prima County	28,000	Interceptor	102,000	Ready for bid
Springerville	2,500	Plant and outfall	135,000	Planning
Sierra Vista	1,600	Plant and outfall	235,000	Planning

All have applied for construction grants from the federal Public Health Service, and most have had them approved. The State Bureau of Sanitation feels that the federal program of grants-in-aid has been very helpful to those communities where sewage projects, particularly sewage treatment facilities, are needed.

DELAWARE

Municipal water supply problems in Delaware are associated with a rapidly expanding population and the ever increasing demand for water for industry. Donald K. Harmeson, director, Division of Sanitary Engineering, Delaware State Board of Health, reports the state is making an inventory of water resources in connection with the Delaware River Basin Survey.

Smyrna, population 3,000, has completed final plans for a new well, aerator, chemical feeder, clearwell and high-lift pump. The New Castle Water Company proposes to construct two new wells, aerator, chemical feeder and high-lift pump to serve a population of 7,000.

Following is a list of proposed sewage projects:

Municipality or Company	Population	Type of Treatment	Estimated cost	Present Status
Seaford	8,000	Interceptor sewer and primary treatment	$540,350	Preliminary plans approved
Milton	2,000	Complete sanitary sewer system and primary treatment plant	520,455	Preliminary plans approved
Georgetown	3,900	Secondary treatment	98,810	Preliminary plans approved
Laurel	5,000 plus	Interceptor sewers and primary treatment	654,390	Preliminary plans approved
Lewes	4,500	Interceptor sewers and primary treatment	932,438	Preliminary plans approved
Rehoboth Beach (Summer) (Winter)	15,800 2,780	Alterations and additions to primary treatment	422,400	Preliminary plans approved
Delaware City and Bacon Health Center	3,000	Sanitary sewers and primary treatment	450,000*	Final plans being made
Bridgeville	2,000	Interceptom and primary treatment	375,000*	Preliminary plans not complete
Camden-Wyoming	3,000	Sanitary sewers and primary treatment	750,000*	Preliminary survey being made

* estimated

IDAHO

Vaughn Anderson, chief, Engineering and Sanitation Section, Division of Public Health, Idaho State Board of Health feels confident that present construction progress is catching up with and correcting water pollution problems. However, water supply improvements in this state appear to be falling behind sewage treatment activities.

In the field of water supply, Bonners Ferry, population 2,500, has authorized construction of a transmission line and complete treatment plant at an estimated cost of $265,000. Planned sewage projects are as follows:

City or District Planning Improvement	Population Served	Type of Improvement	Estimated Cost	Present Status
Boise Beach	25,000	Sewers and treatment		Preliminary engineering planning
Deary	320	Sewers and treatment		Preliminary engineering planning
Genesee	552	New plant		Preliminary engineering planning
Idaho Falls	10,218	New plant	$1,518,830	Authorized
Kooskia	629	Sewers and treatment	136,080	Authorized
Lewiston	12,985	New plant	832,100	Authorized
Lewiston Orchards	8,000	Sewers and treatment	277,872	Preliminary engineering planning
Moscow	10,593	Plant expansion	295,700	Authorized
Payette	4,032	New plant	256,521	Preliminary engineering planning
Pocatello	26,131	New plant.	1,176,000	Authorized
Potlatch	1,105	New plant.	*	Preliminary engineering planning
Sandpoint	4,265	New plant.	259,937	Authorized
Twin Falls	17,600	New plant.	*	Preliminary engineering planning

* Cost estimates not yet completed

The projects marked "authorized" have received favorable votes on necessary bonds and have established a construction schedule.

Communities listed are only those actively planning and have set up tentative time schedules for carrying out projects. A considerable number of communities are in some stage of planning but have not yet established a definite schedule.

NORTH DAKOTA

Many North Dakota cities both small and large are planning sewage projects. W. Van Heuvelen, executive officer, Sanitary Engineering Services, North Dakota State Department of Health reports that in the opinion of the department, North Dakota stream pollution abatement problems are easing and that the federal program for grants-in-aid have been helpful. Monies spent for providing sewage treatment for and by

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October 25, 1957

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WATERFORD NEW YORK

cities in the state has far more than doubled in 1957 over previous years. This is also true for the number of projects being constructed and indications for the year 1958 are that this trend will continue.

In North Dakota construction of new water supply systems for smaller municipalities is not keeping pace with construction of sewage disposal facilities.

The municipalities listed below are anticipating construction of the planned projects beginning during the current 1958 year.

Municipality	Population Served	Type of Improvement	Estimated Cost	Present Status
Almont	190	New water system	$45,000	Plans approved
Glenburn	280	New water system	65,000	Ready for advertising
		New sewerage system	45,000	
Hannaford	300	New sewage treatment	25,000	Advertising
Sherwood	400	New water system	120,000	Considering bids
		New sewerage system	120,000	
Grafton	5,000	Sewage treatment	470,000	Preparing final plans
Grand Forks	35,000	Sewage treatment	1,200,000	Preparing preliminary plans
Taylor	250	New sewerage system	50,000	Final plans approved
		New water system	60,000	Final plans approved
Hoople	450	New sewerage system	80,000	Final plans approved
Westhope	575	Sewage treatment	15,000	Preparing final plans
Leeds	800	Sewerage treatment	27,000	Preparing final plans
Munich	250	New sewerage system	80,000	Preparing final plans
Omabrock	280	New sewerage system	80,000	Plans approved
		New water system	80,000	
Lignite	230	New sewerage system	70,000	Plans approved
Edmore	450	New sewerage system	90,000	Plans approved
Hillsboro	1,300	Sewerage treatment	110,000	Plans approved
Devils Lake	6,400	Sewerage treatment addition	30,000	Plans approved
Crystal	430	New sewerage system	108,000	Preparing final plans
		New water system	100,000	
Milton	300	New sewerage system	70,000	Preparing final plans
Wing	300	New sewerage system	50,000	Plans approved
Berthold	1,500	New sewerage system	94,000	Preparing final plans
Bowbells	800	New sewerage system	61,000	Preparing final plans
Jamestown State Hospital	2,000	Sewage treatment	210,000	Preparing final plans
Hazen	1,200	Sewage treatment	35,000	Preparing final plans
Neche	600	Treatment addition	17,500	Preparing final plans
Emerado	180	New sewerage system	53,000	Preparing final plans
McClusky	850	Sewage treatment	34,000	Preparing final plans
Fargo	50,000	Treatment plant addition	900,000	Preparing preliminary plans
Ashley	1,500	Sewage treatment	15,000	Preparing preliminary plans
Larimore	1,300	System additions—sewers	40,000	Preparing preliminary plans
Hunter	400	New sewerage system	100,000	Preparing preliminary plans
Tioga	450	Sewerage treatment	25,000	Rept'd preparing preliminary plans
St. Thomas	500	New sewerage system	100,000	Rept'd preparing preliminary plans
Wahpeton	5,000	Sewerage system addition	30,000	Rept'd preparing preliminary plans

NOTE: All new sewerage systems include proper treatment of wastes by stabilization lagoons. Municipalities planning treatment facilities only will also be providing proper treatment. Minor additions to sewage collection systems will be numerous and are not mentioned above.

TEXAS

The recent extended drought in Texas aroused public interest as to the need for overall development of water resources in the state. Recent legislative action has also greatly accelerated the planning of water resources. Some of the water resource projects in planning stage are as follows:

Area	Description of Project
Runnels County Water Improvement District	73,000 ac. ft. Reservoir on Colorado River
San Angelo	Twin Buttes Reservoir on South Fork of Concho River—Bureau of Reclamation—municipal, industrial and agricultural purposes—estimated cost $32,000,000.
Dallas	490,000 ac. ft. reservoir on East Fork of Trinity River near Forney
Lake Ponta Development Association	Reservoir on Angelina River—estimated cost $15,000,000.
Brady	Reservoir on Brady Creek
Kent County	Reservoir on Duck Creek, a Brazos Salt Fork Tributary.
Dallas	Iron Bridge Reservoir—impoundment to begin in Fall, 1960.
Athens	Flat Creek Reservoir and supply line—estimated cost $1,100,000.
Central Colorado	Jim Ned Creek Reservoirs—Estimated cost $031,524.
San Jacinto River Authority	New lake above Lake Houston—West Fork of San Jacinto River. Estimated cost $25,000,000.
Travis-Williamson County WC&ID No. 1	Purification plant and supply mains to Leander, Thrall, Thorndale and Taylor. Estimated cost $1,500,000—$2,500,000.
Upper Neches River Authority	Blackburn Crossing Reservoir to supply water to Palestine, Rusk, Jacksonville and also perhaps Tyler
Anahuac	Reservoir on Trinity Bay
Canadian Municipal Water District	Studies continue on Sanford Reservoir and transmission facilities to member cities—Bureau of Reclamation—estimated cost $78,000,000—$85,000,000
Cherokee Water Company	Lake Cherokee No. 2—Longview—estimated cost $1,800-000
Brazos River Authority	Six dams on Brazos River for water conservation, flood control and power. Estimated cost $180,000,000
Blanco—Guadalupe River Authority	Canyon Reservoir
Fort Worth	Cedar Creek Reservoir in Henderson County—yield 154 mgd. Estimated cost $51,000,000 Richland Creek Reservoir in Navarro County—yield 254 mgd. Estimated cost $74,500,000
Sulphur River Municipal Water District	Cooper Dam on South Sulphur River— 10,000 ac. ft conservation storage. Estimated cost $1,100 000
West Central Texas Municipal Water District	Hubbard Creek Reservoir to supply water to Abilene, Albany, Anson and Breckenridge. 302,500 ac. ft. Estimated cost of reservoir $6,500,000 and estimated cost of pipelines $6,500,000
Corps of Engineers Projects:	a. Navarro Mills Reservoir on Richland Creek in Navarro County b. Bardwell Dam on Waxahachie Creek, a tributary to Chambers Creek in Navarro County
White River Municipal Water District	Reservoir and supply lines to serve cities of Post, Ralls Crosbyton and Spur. Approximately $4,000,000

WEST VIRGINIA

In West Virginia planned sewage projects far outnumber contemplated projects in the water works field. Following is a list of proposed water improvement projects:

City	Population	Project description
Cairo	500	New filtration plant. Estimated cost —$55,000
Sisterville	2,313	Major improvements to filtration plant and distribution system.
Cameron	1,800	New filtration plant

The following cities are planning sewage treatment projects:

City	Population	City	Population
Elkins*	9,121	Pinsville	1,062
Weirton*	24,005	Chester*	3,750
Mullens	3,470	Glasgow	881
Princeton*	8,279	Cedar Grove	738
Ravenswood*	1,175	Ripley	1,813
Paden City*	2,558	Vienna	6,020
Oceana	1,373	South Charleston	16,686
Whitesville	1,017	Hinton	5,780
Nitro	3,314	Madison*	2,025
New Cumberland	2,119	Huntington*	86,353
Kenova*	4,320	Wheeling	58,891
Sisterville	2,312	New Martinsville*	4,084

* Plans for these projects are prepared

EDITOR'S NOTE: Projects planned in other states will be featured in the next issue of THE AMERICAN CITY.

Strive for A Good Product as Well as the "Best" Bid

By R. G. WESSELLS
Procurement Officer
District of Columbia

"WHAT is the Best Bid?" by F. V. Jacobs of the Caterpillar Tractor Company in the March 1958 issue (p. 193) of THE AMERICAN CITY gave the industrial point of view on a fundamental issue of public purchasing. This is an area which is very much in need of attention by public purchasing officials, and I am sure that very few of these officials would take exception other than that they perhaps place undue emphasis on the value of accurately kept records of maintenance costs and do not go far enough into what public procurement officials must do in order to insure acceptance of the best bid.

The eyes of the world are focused on our nation's capital. As its procurement officer, I am more than casually interested in *obtaining* and accepting the best bid.

During more than seventeen years in municipal procurement, I have listened to many speeches and read many articles on this subject. "Experts" time and again point out:

1. Personnel time in the use of equipment far exceeds the purchase price. Therefore, productivity and simplicity of operation are prime considerations.
2. Machine life is important—one manufacturer's equipment may last far longer than another's under same service conditions.
3. Replacement value can affect ultimate equipment costs—one manufacturer's equipment may depreciate at a much lower rate than his competitor's equipment.
4. Parts and labor costs in maintaining equipment cannot be overlooked.
5. Excessive delays in obtaining parts for equipment and/or frequent breakdowns can result in costly "down time" and may make it necessary to rent equipment to do the job or pay for excessive personnel standby time.
6. Unique designs, although excellent, may make it necessary to send out equipment for repairs which could otherwise be repaired in our own shops, and may increase operational costs by the operator's lack of familiarity with the equipment, the lack of interchangeability, etc.
7. Standardization of equipment at least as to type and general design characteristics, minimizes operational and maintenance costs and permits greater utilization of equipment.

R. G. Wessells

All of these points are sound. In fact, if any of them are ignored in making the purchase, it would be impossible to insure that the transaction would be in the best interests of the government.

Accurate records of the cost of equipment maintenance is good only as far as it goes. What of a city purchasing agent confronted with bids from a dozen or more suppliers with cost records on only two or three of the makes offered?

In the government of the District of Columbia, we have endeavored to insure a proper value analysis and acceptance of the "best bid." An invitation for bids must fully and clearly describe the needs of the purchaser and attract competition. A bidder must understand from the specifications why a particular design, quality or type of article would not be suitable to purchaser's needs.

Specifications must not be unduly "restrictive". They cannot be "bookish" or unsubstantiated and every element must be justified.

At one time or another on every purchase resulting from public bidding, the buyer who processes the purchase will be called on to justify his specifications. The easiest justification is one made a part of the specifications. On every limiting factor, state why.

In public procurement there is no excuse for unduly restricting a bidder from bidding, nor reason why a public agency should be required to purchase less than completely suitable equipment. Review of previous purchases of equipment of the type under consideration will furnish the names of suppliers normally interested in supplying the article. From data furnished with previous bids, you can readily determine the suitability of available articles, range of prices, plus any defects in specifications previously employed.

A purchase specification should, in most instances, be timeless. It should not require revision every time a purchase is made if it is truly based on performance and not a listing of incidental and unsupportable mechanical components or design characteristics. Don't change a successful purchase specification.

Avoid Opinions on Quality

Public purchasing agents must not concern themselves with purchasing the "best" quality because this becomes, in many instances, a matter of opinion. We cannot set ourselves up as judges of the "quality" of a manufacturer's articles. Instead, we must strive to obtain the best article necessary to do the job, based on all considerations, i.e., reliability of the manufacturer and his agents, price, ease of use, appropriateness of design, construction, size, serviceability, maintenance cost and interchangeability, as related to the intended use of the article to be purchased.

The broad and basic principles of public procurement and their effect on the total cost of operating a city must be sold to management and the public to assure procurement its proper place in the organization structure. These principles and policies are of no value unless put into practice. So—if we have the answers, let's tell the world. If we haven't, let's work to get them and then tell the world.

the First with the Latest!

PhonAlarm TRADE MARK

PATENTS PENDING

the most modern fire and public emergency reporting system available . . . . .

CHECK THE LIST

Q. What Is PHONALARM?

A. PHONALARM Is the Only *Combination Telephone* and *Telegraph Fire* and *Emergency Reporting System* Which Operates Over a Single Wire Fire Alarm Loop. It Is Specially Engineered to Provide *All* the Reliable Features of a Telegraph System *Plus* the Flexibility of a Telephone System.

Q. How Does PHONALARM Work?

A. PHONALARM Is Simply Operated by the Caller Picking Up a Telephone Handset in the Corner Phonalarm Box Which *Automatically Transmits* a Telegraph Code to the Control Office Identifying the Box Location and *Immediately* the Caller Is Able to *Talk* Directly to the Operator at the Central Office and Can *Immediately* Report the *Exact Location* of the Fire or the Nature of His Emergency Call.

Q. Will PHONALARM Operate on My Present Telegraph Central Office System?

A. Yes. PHONALARM Is So Flexible That It Will Operate on Any Existing Central Office System—Whether Old or New.

Q. Can PHONALARM Boxes Be Used with Our Present Telegraph Boxes?

A. Yes. PHONALARM Boxes Will Operate in Perfect Harmony When Mixed on the Same Circuit With Telegraph Boxes or If You Desire, Can Be Put on Separate Circuits.

Q. Who Owns the System?

A. Your Municipality Owns the System and Has Full Control of It At All Times, at Remarkably Low Costs of Installation and Maintenance.

Q. Who Is Using PHONALARM?

A. The Most Recent Installations Were Made at Los Angeles, California, Nashville, Tennessee, Tacoma, Washington and Santa Monica, California.

Q. Where Can I Get More Information on PHONALARM?

A. By Filling Out Return Reply Coupon . . .

PhonAlarm
Division of ANGELUS INDUSTRIES, Inc.
5353 Strohm Avenue
North Hollywood, California
STanley 7-5431

Please send me data on PHONALARM
Division of Angelus Industries, Inc.
5353 Strohm Avenue, North Hollywood, California
STanley 7-5431

Name ..... Title .....

Address: .....

City: .....

PHOTOS: COURTESY OF WILLIAMS TREE SURGEONS, CLARENCE, N. Y.

These Asplundh Chippers reduce brush-loading expense by half the cost of hand-loading and burning methods.

Biggest Municipal Tree-Trimming Program

Buffalo, N. Y. awards contracts to tree maintenance firms to remove dangerous and diseased trees, improve street visibility and tree beauty

BUFFALO is successfully completing a vast tree-trimming program believed to be the largest ever done by any one municipality. Buffalo is noted for its elm trees, and when it was evident that the Dutch Elm disease was threatening to be serious, the city felt that there was no choice but to embark on a general cleanup and sanitation program. Public interest has been increased by all the activity along city streets, resulting in a substantially greater effort in cleaning up their own private trees. Buffalo has between 200,000 and 300,000 street trees, a high percentage of them elms.

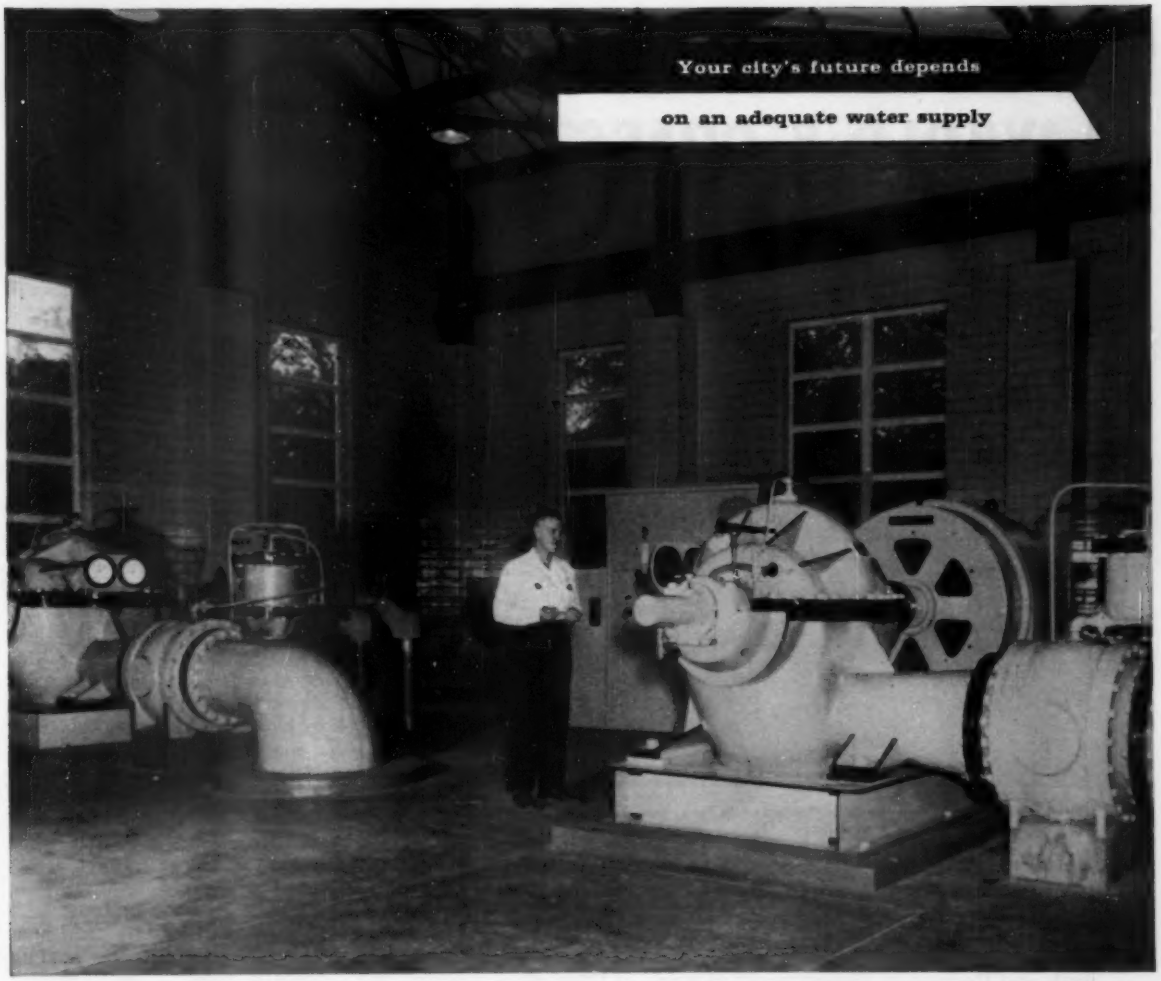
The program started in the fall of 1955 and is just being completed. Work was released at various times to tree contractors on a district basis. Each district has 500 to 1,500 trees.

In the beginning the disposal of brush was the contractor's biggest

A man in a skyworker cab trims a damaged branch.

***Left*:**
Prior to trimming, the thick-foliaged trees made the streets dark, damp, and gloomy.

***Right*:**
Professional trimming lets in sunlight, gives healthy limbs a chance to grow.



At Omaha's new Turner Boulevard Station, two F-M 25 mgd. pumps driven by 700 hp. F-M motors handle 48% of the booster pressure system.

How Omaha puts the sure in pressure

A city of hills, Omaha, Neb., had to repump over 16,000,000,000 gallons of water last year —more than 75% of its total supply.

As the base-load station in this booster system, Metropolitan Utilities District engineers designed the new Turner Boulevard Pumping Station. Here, two automatically controlled Fairbanks-Morse centrifugal pumps, with 50 mgd. combined capacity, handle 48% of the requirements.

Like most progressive cities and towns these days, Omaha is making sure its water facilities match population and consumption growth. Your Fairbanks-Morse Sales Engineer will help you do the same, by working with your own engineers on either water supply or water disposal programs. Write Fairbanks, Morse & Co., Dept. AC-5 600 So. Michigan Avenue, Chicago 5, Illinois.

Ask for F-M Bulletin 5810A on Centrifugal Pumps.

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Edited by NORMAN WILLIAMS, JR.

Zoning & Planning Notes

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Large battery of Laykold courts in Golden Gate Park, San Francisco, California.

By actual survey count, 39% of the U. S. cities of more than 30,000 population covered in our recent survey have Laykold® and Grasstex® courts. There are now more than 10,000 such courts in play, nationwide! Here's why:

Park and Recreation Departments in many of these cities specify Laykold and Grasstex courts exclusively, because they meet the most exacting standards.

DURABILITY—Based on sound design specifications proved by over 20 years experience in all-weather court construction.

BEAUTY—Smooth, colorful surfaces in black, red or green—and now in "two-tone" combinations—to match or blend with any setting.

PLAYER ACCEPTANCE—Unsurpassed! These resilient, true-plane surfaces have perfect "bounce"; are non-abrasive. Playable year 'round.

MAINTENANCE—Practically none. When lines must be repainted every 3 to 4 years, light applications of Laykold Wearcoat will keep the courts in perfect condition.

COST—Initial costs are modest; less than rigid type courts.

RESURFACING—Laykold Resurfacer and Wearcoat give very economical resurfacing; keep old courts with sound bases and good drainage in "like-new" condition.

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San Juan 23, P. R. — Oakland 1, Calif. — Cincinnati 38, Ohio — Tucson, Ariz.
Portland 8, Ore. — Mobile, Ala. — Inglewood, Calif. — Atlanta 8, Ga.

brush was the contractor's biggest problem, but this was quickly eliminated when they started employing mechanical brush chippers. The hazard of fire and smoke from burning brush was no longer a nuisance as wood chips were dumped in low areas needing fill. Breeding places for the disease-carrying beetle were immediately eliminated where previously the bark and wood had lain before there was an opportunity for burning. The units used were principally products of Asplundh Chipper Company. One of the contractors doing a substantial portion of the work, Williams Tree Surgeons of Clarence, N. Y. found that the chippers reduced brush-loading expense to at least one-half the cost of hand-loading and burning methods.

Tree Hazards Removed

Trees have been trimmed to provide headroom of at least 15 feet, eliminating the danger to pedestrian and vehicle traffic.

Previously street lights were hidden by low-hanging limbs. Limbs causing damage or considered dangerous have been cleared away from house roofs and porches. Many trees and limbs in a weakened condition not noticeable from the ground were detected and removed.

Along with dead wood and weak limbs went breeding spots for disease-carrying beetles.

Buffalo accepts the fact it will have to learn to live with the Dutch Elm disease but anticipates holding its diseased trees to approximately one per cent of its total elm trees.

The Public Become The Dog Catchers

LAST MARCH, the people of Newton, Ill. earned $2 apiece for each stray dog caught and delivered to the city dog pound. The offer was good only on Saturdays.

The City Council took this action after receiving reports that dogs have been running in packs and killing small pet dogs and cats. No dog is supposed to run loose in the city, so any free-running dog was eligible. The council provided that the dogs could be redeemed by paying $2, plus $1 per day for every day over two that they remain in custody. All dogs that remained over seven days met the usual fate of impounded canines.

The city required that all impounded dogs be licensed and vaccinated for rabies before being released to their owners.

Edited by NORMAN WILLIAMS, JR.

Zoning & Planning Notes

Acreage Zoning

ILLINOIS. *Honeck* v. *County of Cook*, 146 North Eastern (2d) 35 (Supreme (highest) Court, November 20, 1957).

In this case, the Cook County zoning ordinance included a five-acre district for single-family residences, with a frontage requirement of 300 feet. The next district required one acre and 150 feet of frontage, and after that there was a half-acre district. In this case, the five-acre district was mapped in the southwest part of the County, next to a one-acre district which served as a buffer between that and a half-acre district. The five-acre restriction was challenged on the ground that the highest and best use of the land was for one-acre development. It was indicated in the evidence that the land was hilly and full of ravines, and that there was a ready market for five-acre tracts in the area. Since in this case there were arguments which pointed in both directions, the Court decided to uphold the ordinance.

Here again, as in a striking number of recent decision, the Illinois Court was genuinely disposed in a zoning case to give a municipality the benefit of the doubt—and thus to give the same meaning to the traditional presumption of constitutionality. This was not always the case; for many years Illinois has been vying with Michigan (and occasionally with Pennsylvania) for leadership in judicial hostility to zoning regulations.

Amateur Radio Transmission Towers in Residence District

NEW YORK. *Presnell* v. *Leslie*, 3 New York (2d) 384, 165 New York Supplement (2) 488 (Court of Appeals (highest court), July 3, 1957).

An amateur radio operator, duly licensed by the Federal Communications Commission, operated a "ham" broadcasting and receiving station for seven years in a Residence A district in Westbury, Long Island, with an antenna placed on top of a 10-foot wooden pole. When he sought to replace this pole with a 44-foot steel tower, the local authorities refused to approve the tower on the ground that it was not a customary accessory use, and the lower courts agreed. The Court of Appeals affirmed.

In the opinion, the Court pointed out that there is no evidence in the record indicating that such towers were customary in suburban residential areas.

> "In the present case, there was no sufficient showing that it was customary to have towers of the kind petitioner desired to erect in 'A' residential areas of a suburb. While we are informed that there are 146,000 licensed amateur radio operators in the United States, we are not told the number using antennae of the type petitioner seeks to erect, nor where amateur operators having such towers reside."

Moreover, the Court drew a sharp distinction ("an unmistakable difference") between an ordinary television receiving antenna and the large radio transmission and receiving tower involved here.

> ". . . in the conduct of a hobby the scale of its operation may well carry it beyond what is customary or permissible."

Reference was made to the danger of children climbing such towers, to the aesthetic shortcomings of the tower, and to the effect on property values. Moreover, while it was argued that the Federal regulations, licensing such operators and regulating their "antenna structures," had preempted the whole field of regulating such broadcasting, the Court pointed out that the Federal licensing scheme was concerned primarily with the operators' competence, and that other aspects of their activity and equipment were properly subject to local regulation. No opinion was given on the validity of the 20-foot height regulation on accessory uses.

Two judges dissented on the ground that since amateur radio broadcasting was a permitted accessory use, any equipment needed in connection therewith should be similarly regarded. No reference was made in the dissenting opinion to the problem of whether such towers might be appropriate in rural areas, but not in suburban—nor to the fact that petitioner had been broadcasting for seven years with a 10-foot tower. However, the opinion did contain some excellent language in favor of embryo scientists in electrical engineering and electronics, and against the "urge toward conformity in modern society."

This opinion represents a healthy breath of fresh air in a much-muddled field of law. In other jurisdictions, it has been held that such towers must be permitted in a residence district; and in at least one case, the Court waxed most eloquent about the tyranny of forbidding such huge structures, towering over crowded suburban houses.

Warehouse in Commercial District

PENNSYLVANIA. *Sears, Roebuck & Company* v. *Power*, 134 Atlantic (2d) 659 (Supreme (highest) Court, September 30, 1957).

A large building in Philadelphia, formerly a garage, was used by Sears, Roebuck & Company for storage of goods, and for occasional deliveries to customers of articles purchased at another store. The relevant "A" commercial district regulations were amended to permit "sale *and* storage of goods, merchandise and commodities in stores or showrooms for sale on the premises at retail," after an amendment of the previous language referring to "sale *or* storage".

In the opinion, the Court held that the structure was essentially a warehouse, and that most of the sales were in fact made elsewhere, though an occasional sale or delivery might take place in the building in question. It was therefore held that, as a warehouse, the building was not permitted in the district.

> "In determining whether a building is a warehouse or a store for retail sales on the premises, the critical question is: Does it possess the characteristics embodied in the zoning law concept of a warehouse or of a retail store? The record is plain that the Pine Street premises has the characteristics of a warehouse. It is serviced by a regular flow of heavy trucks producing noxious diesel fumes and causing a serious traffic problem. Further, there is continual loading and unloading of freight which results in annoying noise as does the handling of the merchandise necessary to the operation of the Sears premises."

The Court also held irrelevant the technical question under sales law as to when and where title passed to purchaser on goods stored here.

> "The 'passage of title' concepts in the Uniform Commercial Code are not helpful in solving the zoning problem presented in this case. The rules of the code relied upon are designed to determine, at the various stages in a commercial transaction, the relative rights and liabilities of buyers and sellers. While the subtleties of the sales definition of the code are important to the law of commercial contracts, they have no application to the zoning regulations involved in the present case which concern the physical use to which land is put."

Moreover, the provisions authorizing the town to maintain parking lots in residence areas, when no one else could, was held to be justified because the town (and thus the voters) retained full control of the operation of such lots, while a provision authorizing parking lots might generally cause considerable harm.

Public Parking Lots Permitted in Residence Districts

MASSACHUSETTS. *Pierce* v. *Town of Wellesley*, 146 North Eastern (2d) 666 (Supreme (highest) Court, December 11, 1957).

The town of Wellesley established a number of parking lots, located at the edges of the business district but generally within residence districts—on the theory that the zoning provision permitting "a public school or other public use" authorized public parking lots, along with other municipal services, in residence districts. When the courts cast doubt upon this theory in connection with an additional proposed parking lot on leased land, the residential district regulations were amended to authorize specifically a "municipally owned or operated public parking lot" in residence districts. This provision was challenged as unconstitutional by those objecting to the additional parking lot. It appeared that the lot was planned in part to provide parking for the customers of a department store which was adjacent and within the business district, and that the traffic congestion was causing harm to both the business and the residential areas.

In the opinion the Court held that provision of off-street parking spaces was a public purpose for which public funds could be spent, and further that the existence of some incidental advantage to a private party (the department store) did not invalidate the proceedings.

> "Accordingly, the amendment of S 2 B 3 is not invalid because it would assist the owners of nearby business properties and others to retain tenants and help such tenants to attract customers to their stores."

Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS—Charles S. Rhyne, General Counsel

Annexation Ordinance Must Be Construed As A Whole—Piecemeal Annexation

Where annexation ordinance proposed to annex almost all of two other smaller cities and 100 acres of farm land, held, court could not decree annexation of only farm land since "annexation ordinances must stand or fall as a whole . . . piecemeal annexation is not permissible." *Donovan* v. *City of Louisville*, 299 S.W.2d 636 (Ky., Mar. 29, 1957)

Bonds—Failure to Require Not Actionable

Requiring officer to post statutory bond is ministerial duty, the neglect of which would not give rise to individual liability. *Langley* v. *Taylor*, 95 S.E.2d 115 (N.C., Nov. 21, 1956)

City Property—Restriction On Sale by City Enforced

In civil action by abutting owners against vendee of city property to restrain constructing one-story building where city deed of land contained covenant requiring seven-story elevator structure, held, building permit for one-story structure issued in violation of city's covenant is invalid since municipality has no authority to waive such restrictions and since to do so would constitute fraud on public. *Vaccaro* v. *Asbury Park Enterprises*, 126 A.2d 213 (N.J. Super. Ct., App. Div., Oct. 26, 1956)

Condemnation—Easement to Lake May Not Be Condemned

Municipality has no power to condemn right of way over land to permit public fishing and boating on private lake. *Osceola County* v. *Triple E Development Co.*, 90 So.2d 600 (Fla., 1956)

Dedication—Levy On Allegedly Dedicated Area Inconsistent With

In action by city to establish common law dedication of paved portion of lot, held that city failed to show intent to dedicate and acceptance by public where city had been levying ad valorem taxes on whole lot. *City of Miami* v. *Jansik*, 89 So.2d 644 (Fla., Sept. 28, 1956)

Garbage—Assessment Against Landlord For Collection of Held Valid

In action by owner of houses rented to tenants to have statute authorizing levy of service charges for garbage collection in same manner as county taxes invalidated, held, assessment not tax, owner not occupant pays, and there was no improper exercise of legislative power to classify properties in special district to defray cost of benefiting improvement. *Pumphrey* v. *Comm'rs of Anne Arundel County*, 130 A.2d 297 (Md., Mar. 15, 1957)

Gross Receipts Tax—Lessee of Parking Lot Not Taxable on Rebate in Rent for Cars Parked by Landlord Bank

In action by city to recover under ordinance levying tax of 10% on gross receipts from "all transactions in or for parking of automobiles on open parking lots" from lessee-operator of parking lot who received money from church and restaurant for unrestricted use of lot and 10c per car abatement in rent for cars parked by landlord, held, lessee must pay taxes on first but not second claim. *City of Philadelphia* v. *Broomall*, 130 A.2d 713 (Pa., Mar. 11, 1957)

Industrial Development—Sale of Park Property Attacked

In action by taxpayers to prevent consummation of sale of land no longer needed as park to corporation at half fair market value, held, transfer of municipal property to manufacturing corporation to promote industry is clear abuse of discretion. *Hermann* v. *City of Lake Mills*, 82 N.W.2d 167 (Wis., Apr. 9, 1957)

Insurance of Municipality Not Submitted to Jury

In action for injuries sustained when car hit schoolbus, held, fact that municipality admittedly carried insurance on bus was not issue plaintiff had right to submit to jury though allegation of insurance is necessary. *Wilson* v. *Maury County Bd. of Educ.*, 302 S.W.2d 502 (Tenn. App., Jan. 18, 1957)

Insurance Renders City Liable

In action to recover for injuries sustained by student in gym class at school, held, statute renders municipalities securing insurance liable up to limits of policy so that plaintiff was entitled to inspect policies. *Villars* v. *City of Portsmouth*, 129 A.2d 914 (N.H., Feb. 28, 1957).

License Tax—Wholesaler May Be Retailer As to Certain Transactions

In action to determine amount of mercantile license taxes, held, dealer or vendor under statutes could be both wholesaler and retailer, depending on nature of transaction. *Paper Products Co.* v. *City of Pittsburgh*, 130 A.2d 219 (Pa., Mar. 20, 1957)

Pinball Machines—Shuffleboard Held Not to Be Within Amusement Device Licensing Requirement

In prosecution of owner of shuffleboard under North Tarrytown ordinance requiring license of all mechanically- and manually-operated amusement devices, held that ordinance nor enabling statute encompassed shuffleboard though scoring device could be mechanically operated. *People* v. *Tierney*, 165 N.Y.S.2d 865 (N. Y., Westchester City Ct., Nov. 20, 1956)

Streets—Boundary of Town—Fixing of As Vacation of Street

In action to prevent land owner from interfering with free passage over street which once was included in City of Stafford but which later was placed outside city limits by establishing boundary at east side of street in 1905, held, exclusion of street from city limits constituted vacation thereby vesting title to street in abutting owners, one of whom gained title to other half of street by adverse possession. *Truck-Trailer Supply Co.* v. *Farmer*, 311 P.2d 1004 (Kan., June 8, 1957)

Streets—Grades Unequal at Intersection—City Not Liable Where State-Controlled

In action against city for injuries sustained when car travelling on State Freeway within city dipped on entering intersection, passed over rise in crown, and dipped back to road level, held, that where city intersection was part of state highway system and plan, design, construction and engineering was under exclusive control of State Highway Department, city would not be liable though it had agreed to maintain Freeway and assume jurisdiction over access roads. *Harlan* v. *City of Tucson*, 309 P.2d 244 (Ariz., Mar. 19, 1957)

Taxation—Railroads—Assessment of Property At Less Than True Value Permitted

In action involving Hoboken, Jersey City, Newark, and Secaucus, where state director had assessed railroad's property for purposes of local taxation at full value, held, state director had power to assess land at less than full value where other property in municipalities involved were assessed on only a fraction of full value to avoid discrimination. *Delaware, Lackawanna & Western R.R.* v. *Neeld*, 130 A.2d 6 (N. J., Mar. 11, 1957)

Taxation—State Gross Receipts Tax Does Not Apply to Municipal Swimming Pools and Golf Course

In action by city against state to set aside assessments of state gross receipts tax on three municipally-owned swimming pools and one golf course, held, since statute did not specifically include municipalities, except as to athletic contests, assessment was invalid. *City of Anniston* v. *State*, 91 So.2d 211 (Ala., Nov. 29, 1956)

Traffic Light and Fire Box Pole Held Governmental Function

In action by lineman who received shock and was knocked to ground while climbing traffic light and fire box pole, held, operation of traffic light is governmental function so that city is not answerable for mere negligence. *Stanley* v. *City of Macon*, 97 S.E.2d 330 (Ga., App., Div. No. 2, Feb. 12, 1957)

Trees—City Not Liable for Damage to Sewers Caused by Trees

In action by landowner for damage to sewer line allegedly caused by roots of trees planted by city, held, insufficient facts alleged to show city responsible. *Morrison* v. *City of New Rochelle*, 155 N.Y.S.2d 937 (N. Y., Rochelle City Ct., Oct. 18, 1956)

Trucks—Ordinance Establishing Truck Routes Invalid

In action by county to invalidate borough ordinance regulating truck traffic on county roads, held, that statute authorizing municipalities to provide system of truck routes grants power over only those streets that are within a town's exclusive jurisdiction unless system of regulation is approved by State Director of Motor Vehicles. *County* v. *Borough of Rutherford*, 125 A.2d 568 (N.J. Super. Ct., Sept. 6, 1956)

Zoning—Radio Tower Denied In Residential Zone—Accessory Use Not Shown

In action to review denial of permit to allow 44-foot rotary beam antenna tower in Westbury Village residential zone, held, evidence failed to show radio towers are customarily incidental use in highly classified residential area, federal government has not preempted regulation of amateur radio to preclude regulating height of radio towers in certain zones, and though zoning may not restrict use of property for purely aesthetic reasons alone, such considerations may be given weight in deciding validity of ordinance. *Presnell* v. *Leslie*, 144 N.E.2d 381 (N.Y., July 3, 1957)

Zoning—Trailer Not House for Purpose of

In suit to require removal of trailer, held, movable trailer on wheels is not a "house" for purposes of zoning that permits only one-family detached houses in single residence district. *Town of Marblehead* v. *Gilbert*, 137 N.E.2d 921 (Mass., Nov. 2, 1956)

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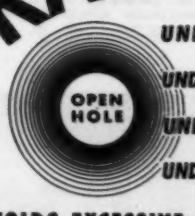

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George A. Whiten
Gainesville, Ga.

Donald L. Christen
Pleasanton, Calif.

L. M. Crow, Jr.
Grand Prairie, Texas

B. D. Banks
Rosebud, Texas

Franklin D. Aleshire
Pico-Rivera, Calif.

FRANKLIN D. ALESHIRE, city manager of La Puente, Calif., was recently appointed first manager of Pico-Rivera, Calif. He was previously assistant manager of Ontario, Calif.

B. D. BANKS, formerly city auditor of Richardson, Tex., was appointed city manager of Rosebud, Tex., succeeding Louis J. Smitzes.

ANDREW J. BROWNING, manager of Dalhart, Texas for more than two years, has been appointed manager of Pendleton, Ore., succeeding Leland M. Swanson. He was previously office manager and administrative assistant in the public works department of Eureka, Calif.

DONALD L. CHRISTEN, administrative assistant in Antioch, Calif., was recently appointed manager of Pleasanton, Calif. Mr. Christen was previously in personnel work in San Joaquin Co., Calif. and the State of California.

GRADY W. COURTNEY, who had been manager of Panama City, Fla. for over five years, has been appointed manager of Mulberry, Fla.

RAYMOND S. COX, JR., city manager of Clarks Summit, Pa., was appointed manager of Sharpsville, Pa., succeeding Jack G. Forester. Mr. Cox is an attorney and was previously manager of Princess Anne, Md.

L. M. CROW, JR., city manager of Harlingen, Texas for the past seven years, was recently appointed manager of Grand Prairie, Texas, succeeding Dean I. Dauley. He was previously manager of Wichita Falls, Texas.

JACOB D. DUMELLE, director of inspections in Peoria, Ill. was recently appointed the first manager of Lebanon, N. H. Mr. Dumelle was previously administrative assistant in Peoria and Brookfield, Ill.

S. V. ERDELYI, manager of McCandless Township, Pa. for more than three years, has been appointed manager of Cocoa Beach, Fla. Mr. Erdelyi was previously manager of North Bay Village, Fla., and secretary of Donora, Pa.

ERNEST M. FORD, a local insurance man, was recently appointed city manager of Owensboro, Ky., succeeding John A. Hettler.

PAUL F. FREDERICK, traffic coordinator and assistant to the city manager in Grand Forks, N. D., has been appointed manager in Minot, N. D., succeeding R. B. Riddle.

WILLIAM A. GILDEA, former manager of Newport, R. I. was recently appointed the first city manager of Brockton, Mass.

ROBERT L. HEGEL, research associate in the Bureau of State and Community Service of the University of Colorado, was appointed manager of Villa Park, Ill., succeeding Roger K. Ulstad. Mr. Hegel was previously manager of Brookfield, Mo. and administrative assistant in Glencoe, Ill.

HUGH T. HENRY, manager of Claremore, Okla., has been appointed manager of Lebanon, Mo., succeeding Stanley Brooks. He was previously manager of Lombard, Ill. and administrative assistant in Maywood, Ill.

JAMES E. JOHNSON, city manager of Chandler, Ariz., was recently appointed the first manager of Worthington, Ohio. Mr. Johnson was previously assistant engineer in the public works department of South Gate, Calif.

MARSHALL W. JULIAN, assistant administrative officer of Inglewood, Calif., was recently appointed manager of San Fernando, Calif., succeeding Ray A. Woods. He was employed in several administrative positions in the City of Los Angeles, Calif.

RICHARD D. LAND, city engineer in Sidney, Neb., was recently appointed manager of Valentine, Neb., succeeding Howard Wuerth. Mr. Land was previously in engineering and construction work.

MORRIS N. LIPP, assistant manager of Miami Beach, Fla., has been appointed manager of that city, succeeding Claude A. Renshaw, who resigned after 33 years to become president of a local savings and loan association. Mr. Lipp has been with the City of Miami Beach for 32 years.

ARTHUR LOWTHER, manager of Golden, Colo. for the past four and one-half years, was recently appointed the first manager of Skokie, Ill. Mr. Lowther was previously clerk-treasurer of Golden, Colo.

ROBERT H. OLDLAND, city manager of Santa Maria, Calif. for the past three years, has been appointed the first manager of Champaign, Ill. Mr. Oldland was previously assistant manager of Monterey, Calif.

LOUIS J. SMITZES, manager of Rosebud, Texas, is now manager of El Campo, Texas, succeeding R. A. Baca.

GEORGE A. WHITEN, previously manager of Manchester, Ga. for four years, was recently appointed manager of Gainesville, Ga., succeeding Riley Milam.

RACE N. WILT, assistant to the city manager of Coronado, Calif., was appointed manager of that city, succeeding Earl F. Ketcham. He was previously assistant engineer in Wilmette, Ill. and in Santa Ana, Calif.

ORIN F. NOLTING
Executive Director
International City Managers' Association

Arthur Lowther
Skokie, Ill.

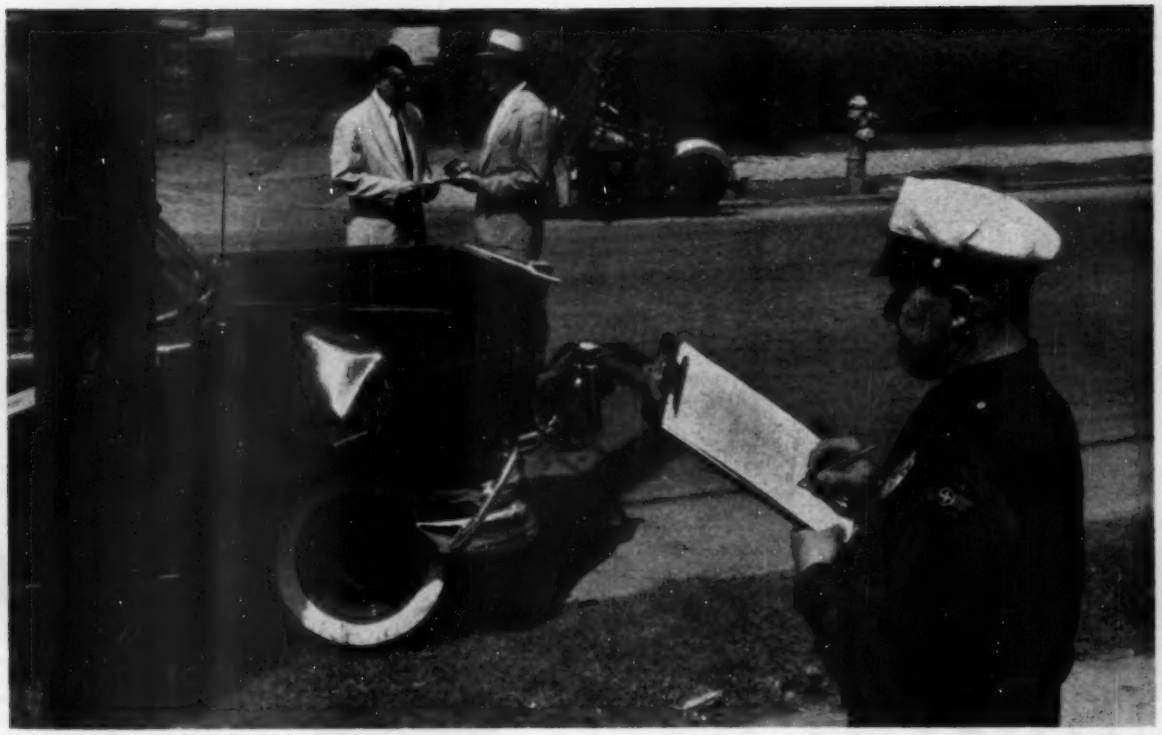
William A. Gildea
Brockton, Mass.

Marshall W. Julian
San Fernando, Calif.

Ernest M. Ford
Owensboro, Ky.

Jacob D. Dumelle
Lebanon, N. H.

James E. Johnson
Worthington, Ohio



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- Dispatcher's Log
- Phone Calls
- Car Reports
- Teletypes
- Inspector's Report
- Report to Commissioner
- Tow Sheets
- Patrol Wagon Reports
- Missing Persons Report
- Arrest Blotter
- Report to D.C.
- Report on Stolen Autos

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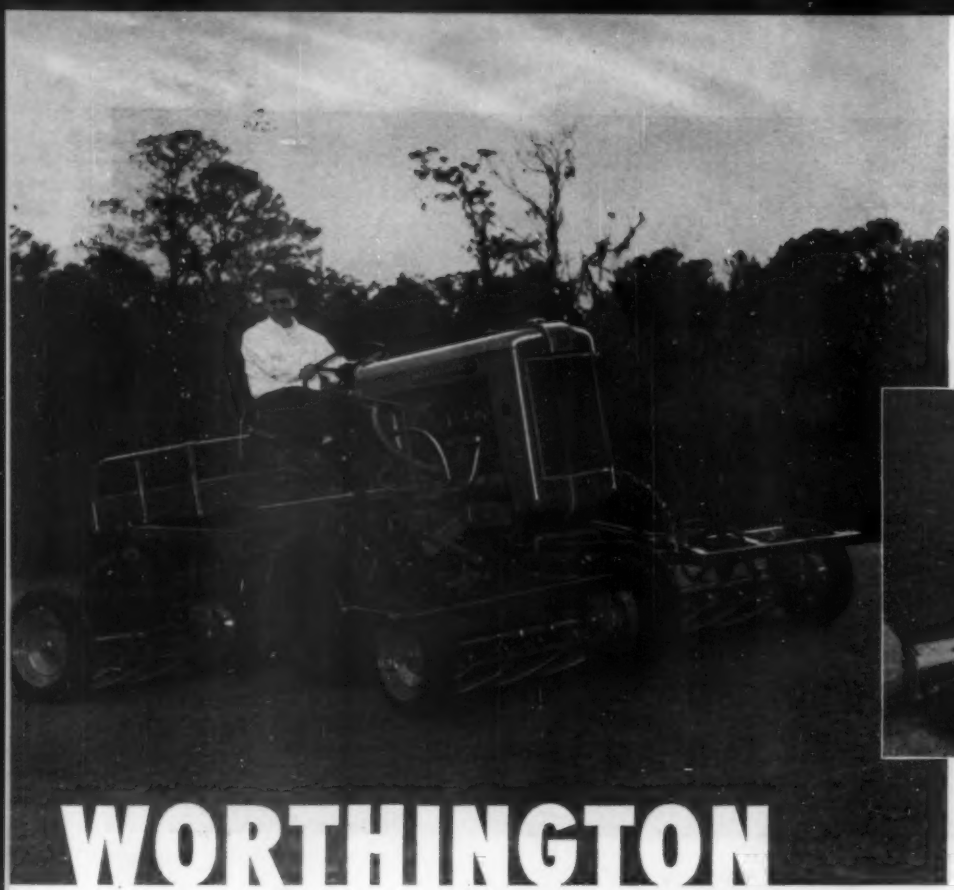

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Gang mower capacity at power mower cost—that's what the Worthington Triplex offers. This versatile unit gives users everything from a putting-green type of mower to a three-gang unit.

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Conventions — When & Where

Conventions listed this month for the first time are indicated by an asterisk (*)

***May 1-2—Durham, N. C.**
SOUTHERN MUNICIPAL AND INDUSTRIAL WASTE CONFERENCE. Annual Conference (Duke University). Exec. Sec., J. W. Williams, Professor of Civil Engineering, Duke University, Durham, N. C.

May 5-7—Lafayette, Ind.
CENTRAL STATES SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Purdue University). Sec.-Treas., George F. Bernauer, 713 Chapman St., Madison, Wis.

May 5-7—West Lafayette, Ind.
PURDUE INDUSTRIAL WASTE CONFERENCE. Annual Meeting (Purdue Memorial Union). Exec. Sec., Don E. Bloodgoord, Professor of Sanitary Engineering, Civil Engineering Bldg., Purdue University, W. Lafayette, Ind.

May 6-8—New Orleans, La.
AMERICAN PUBLIC POWER ASSOCIATION. Annual Meeting (Roosevelt Hotel). Gen. Mgr., Alex Radin, 1025 Connecticut Ave., N.W., Washington 6, D. C.

May 6-8—Washington, D. C.
NATIONAL HIGHWAY USERS CONFERENCE. Annual Meeting (Mayflower Hotel). Dir., Arthur C Butler, 906 National Press Bldg., Washington, D. C.

May 11-13—Nashville, Tenn.
TENNESSEE MUNICIPAL LEAGUE. Annual Convention (Andrew Jackson Hotel). Exec. Sec., Herbert J. Bingham, Life & Casualty Tower, Nashville, Tenn.

May 14-17—Washington, D. C.
NATIONAL RIVERS AND HARBORS CONGRESS. Annual Convention (Mayflower Hotel). Exec. Vice Pres., William H. Webb, 1028 Connecticut Ave., N.W., Washington 6, D. C.

May 15-17—Spokane, Wash.
AMERICAN WATER WORKS ASSOCIATION—Pacific Northwest Section. Annual Meeting (Davenport Hotel)). Exec. Sec., F. D. Jones, Asst. Water Supt., Spokane Water Department, 306 City Hall, Spokane, Wash.

May 15-17—Tucson, Ariz.
AMERICAN WATER WORKS ASSOCIATION—Arizona Section. Annual Meeting (El Conquistador Hotel). Sec.-Treas., Stanford I. Roth, Supervisor of Water Collections, Division of Water & Sewers, Phoenix, Ariz.

May 15-17—Tucson, Ariz.
ARIZONA SEWAGE AND WATER WORKS ASSOCIATION—Sewage and Industrial Wastes Section (El Conquistador Hotel). Sec.-Treas., Stanford I. Roth, 813 Jefferson St., Phoenix, Ariz.

May 15-17—York, Pa.
EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Meeting (Yorktowne Hotel). Sec., Chief Edwin J. Clark, Box 328, Wayne, Pa.

May 18-22—Washington, D. C.
AMERICAN SOCIETY OF PLANNING OFFICIALS, National Planning Conference (Statler Hotel). Exec. Dir., Dennis O'Harrow, ASPO, 1313 E. 60th St., Chicago 37, Ill.

May 18-24—San Juan, P. R.
INTERAMERICAN ASSOCIATION OF SANITARY ENGINEERING. Sixth Congress. For information, address Enrique Ortega, Box 218, San Juan, P. R.

May 19-22—Toronto, Canada
NATIONAL INSTITUTE OF MUNICIPAL CLERKS. Annual Meeting (King Edward Hotel). Sec.-Treas., Arthur J. Shinners, Town Clerk's Office, Town Hall, Brookline 46, Mass.

May 19-23—Chicago, Ill.
NATIONAL FIRE PROTECTION ASSOCIATION. Annual Meeting (Palmer House). Exec. Sec., Charles S. Morgan, 60 Batterymarch St., Boston, Mass.

May 21-23—Spokane, Wash.
ASSOCIATION OF WASHINGTON CITIES. Annual Meeting (Davenport Hotel). Exec. Sec., Chester Biesen, 250 Smith Hall, University of Washington, Seattle 5, Wash.

May 24-25—Toronto, Canada
INSTITUTE OF TRAFFIC ENGINEERS. Spring Board Meeting. Exec. Sec., David M. Baldwin, 211 Stratchona Hall, New Haven 11, Conn.

May 25-29—Philadelphia, Pa.
AIR POLLUTION CONTROL ASSOCIATION. Annual Meeting (Sheraton Hotel). Exec. Sec., Harry M. Pier, 4400 5th Ave., Pittsburgh 13, Pa.

May 26-27—Liberty, N. Y.
NEW YORK SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Grossinger's). Exec. Sec., R. C. Sweeney, 55 Church Street, White Plains, N. Y.

June 1-4—Lake Placid, N. Y.
NEW YORK CONFERENCE OF MAYORS. Annual Conference (Lake Placid Club). Exec. Sec., Addison Mallery, 6 Elk St., Albany, N. Y.

June 1-4—Toronto, Canada
AMERICAN WATER WORKS ASSOCIATION—Canadian Section. Annual Meeting (Royal York Hotel). Sec.-Treas., Dr. A. E. Berry, 72 Grenville St., Toronto, Ontario.

June 1-4—Victoria, British Columbia
CANADIAN FEDERATION OF MAYORS AND MUNICIPALITIES. Annual Conference (The Empress Hotel). Exec. Dir., George S. Mooney, Office M-33, Mount Royal Hotel, Montreal, Quebec

June 4-5—Gardner, Mass.
NEW ENGLAND SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Spring Meeting (Colonial Hotel). Vice Pres., Henry F. Munroe, 75 Paine Ave., Cranston 10, R. I.

June 5-7—Butte, Mont.
MONTANA MUNICIPAL LEAGUE. Annual Meeting (Finlen Hotel). Exec. Director, Alfred F. Klingler, Box 456, Shelby, Mont.

June 8-12—Milwaukee, Wis.
MUNICIPAL FINANCE OFFICERS ASSOCIATION OF THE UNITED STATES AND CANADA. Annual Conference (Hotel Schroeder). Exec. Dir., Joseph F. Clark, 1313 E. 60th St., Chicago 37, Ill.

June 11-13—Colorado Springs, Colo.
COLORADO MUNICIPAL LEAGUE. Annual Meeting (Antlers Hotel). Exec. Director, Jay T. Bell, 2300 Broadway, Boulder, Colo.

June 11-13—Minneapolis, Minn.
LEAGUE OF MINNESOTA MUNICIPALITIES. Annual Meeting (Hotel Nicollet). Exec. Sec., C. C. Ludwig, 15 University Library Bldg., Minneapolis 14, Minn.

June 12-13—Frederick, Md.
MARYLAND-DELAWARE SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Francis Scott Key Hotel). Sec.-Treas., W. M. Bingley, 7411 N. Charles St., Baltimore 18, Md.

June 12-14—Biloxi, Miss.
MISSISSIPPI MUNICIPAL ASSOCIATION. Annual Convention (Buena Vista Hotel). Exec. Vice Pres., W. J. Caraway, 205 Lamar Life Bldg., Jackson, Miss.

June 12-14—McCall, Idaho
IDAHO MUNICIPAL LEAGUE. Annual Meeting (Shore Lodge). Exec. Dir., Robertson W. Smith, Center Bldg., Weiser, Idaho.

***June 16-17—Ocean City, Md.**
MARYLAND MUNICIPAL LEAGUE. Annual Convention (Atlantic Hotel). Exec. Sec., Edmund C. Mester, Box 276, College Park, Md.

June 18-20—Toledo, Ohio
OHIO SEWAGE AND INDUSTRIAL WASTES TREATMENT CONFERENCE. Annual Meeting (Commodore Perry Hotel). Sec.-Treas., Cleamon E. Lay, Ohio Dept. of Health, Div. of Sanitary Engineering, 101 N. High St., Columbus, Ohio.

June 22-23—Washington, D. C.
NATIONAL HOUSING CONFERENCE. Annual Meeting (Hotel Statler). Exec. Vice Pres., Lee F. Johnson, 1025 Connecticut Ave., N.W., Washington 6, D. C.

June 22-27—Boston, Mass.
AMERICAN SOCIETY FOR TESTING MATERIALS. Annual Meeting (Statler Hotel). Exec. Sec., R. J. Painter, 1916 Race St., Phila., Pa.

June 23-27—Portland, Ore.
AMERICAN SOCIETY OF CIVIL ENGINEERS. National Convention (Multnomah Hotel). Exec. Sec., William H. Wisely, 33 W. 39th St., New York, N. Y.

June 25-27—Erie, Pa.
AMERICAN WATER WORKS ASSOCIATION—Pennsylvania Section. Annual Meeting (Lawrence Hotel). Sec.-Treas., L. S. Morgan, 413 First National Bank Bldg., Greensburg, Pa.

June 25-27—Rapid City, S. D.
SOUTH DAKOTA MUNICIPAL LEAGUE. Annual Meeting (Sheraton-Johnson Hotel). Exec. Dir., J. G. Barger, Box 938, Aberdeen, S. D.

June 30-July 2—Washington, D. C.
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS. Annual Convention (Hotel Shoreham). Gen. Chairman, Henry Schultheis, Mt. Zephyr Drive, Alexandria, Va.

July 7-11—Cleveland, Ohio
THE AMERICAN INSTITUTE OF ARCHITECTS. Annual Meeting (Cleveland Hotel). Exec. Dir., Edmund R. Purves, 1735 New York Ave., N.W., Washington 6, D. C.

***July 20-22—Savannah, Ga.**
GEORGIA MUNICIPAL ASSOCIATION. Annual Convention (Ogelthorpe Hotel). Exec. Dir., W. E. George, 603 Fulton Federal Bldg., Atlanta, Ga.

***July 28-August 1—New York, N. Y.**
NATIONAL ASSOCIATION OF SANITARIANS. Annual Conference (Sheraton-McAlpin Hotel). Exec. Sec., Nicholas Pohlit, University of Denver, Denver 10, Colo.

August 10-13—Portland, Ore.
NATIONAL ASSOCIATION OF COUNTY OFFICIALS. Annual Convention (Multnomah Hotel). Exec. Dir., Bernard F. Hillenbrand, 1721 De Sales St., N.W., Washington 6, D. C.

August 17-22—Toronto, Canada
ILLUMINATING ENGINEERING SOCIETY. Technical Conference (Royal York Hotel). Exec. Sec., A. D. Hinckley, 1860 Broadway, New York 23, N. Y.

August 31-Sept. 6—Liege, Belgium
INTERNATIONAL FEDERATION FOR HOUSING AND TOWN PLANNING. Annual Convention. For information address Dennis O'Harrow, 1313 E. 60th St., Chicago 37, Ill.

September 3-5—Philadelphia, Pa.
NATIONAL CITIZENS PLANNING CONFERENCE OF THE AMERICAN PLANNING AND CIVIC ASSSOCIATION. (Bellvue-Stratford Hotel). Exec. Sec., Harlean James, 901 Union Trust Bldg., Washington 5, D. C.

September 9-12—New York, N. Y.
UNITED STATES CIVIL DEFENSE COUNCIL. Annual Conference (Waldorf-Astoria Hotel). Exec. Dir., Elliott Jackson, Municipal Auditorium, Atlanta, Ga.

(Continued on next page)

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September 11-13—New Orleans, La.
UNITED STATES CONFERENCE OF MAYORS. Annual Conference (Roosevelt Hotel). Exec. Dir., Harry R. Betters, 730 Jackson Place, N.W., Washington 6, D. C.

Sept. 14-17—Colorado Springs, Colo.
NATIONAL MUNICIPAL LEAGUE. National Conference on Government (Antlers Hotel). Asst. Dir., Allen H. Seed, Jr., 47 E. 68th St., New York 21, N. Y.

September 16-19—Los Angeles, Calif.
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual Conference (Biltmore Hotel). Sec.-Mgr., B. Richter Townsend, International Association of Fire Chiefs, 232 Madison Ave., New York 16, N. Y.

September 22-26—Atlantic City, N. J.
NATIONAL RECREATION CONGRESS (Hotel Ambassador). Sec., Willard B. Stone, 8 W. 8th St., New York 11, N. Y.

Sept. 28-Oct. 1—Kansas City, Mo.
AMERICAN PUBLIC WORKS ASSOCIATION. Annual Convention (Muehlebach Hotel). Exec. Sec., D. F. Herrick, 1313 E. 60th St., Chicago, Ill.

***Oct. 6-8—Shawnee-On-Delaware, Pa.**
GOVERNMENTAL RESEARCH ASSOCIATION. Annual Conference (Shawnee Inn). Sec., Elsie V. Haas, 684 Park Avenue, New York, N. Y.

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2. Are we protecting the lives of our children from these disease carriers?
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October 6-9—Detroit, Mich.
FEDERATION OF SEWAGE AND INDUSTRIAL WASTES ASSOCIATIONS. Annual Conference (Sheraton-Cadillac Hotel). Exec. Sec., Ralph E. Fuhrman, 4435 Wisconsin Ave., N.W., Washington, D. C.

***October 6-10—Sun Valley, Idaho**
INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS. Annual Conference (Sun Valley Lodge). Managing Dir., Hal Colling, 610 South Broadway, Los Angeles, Calif.

October 7-9—
Blackwater Falls State Pk., West Va.
NATIONAL CONFERENCE OF STATE PARKS. **Annual Meeting (Park Lodge). Exec. Sec.,** Harlean James, 901 Union Trust Bldg., Washington 5, D. C.

***October 12-15—New Orleans, La.**
AMERICAN TRANSIT ASSOCIATION. Annual Convention (Roosevelt Hotel). Exec. Vice Pres., G. W. Anderson, 292 Madison Avenue, New York 17, N. Y.

***October 12-15—San Francisco, Calif.**
NATIONAL ASSOCIATION OF HOUSING AND REDEVELOPMENT OFFICIALS. Annual Convention (Sheraton-Palace Hotel). Exec. Dir., John D. Lange, 1313 E. 60th St., Chicago 37, Ill.

***October 12-16—New Orleans, La.**
AMERICAN INSTITUTE OF PARK EXECUTIVES. Annual Convention (Jung Hotel). Exec. Sec., Alfred B. La Gasse, Ogelbay Park, Wheeling, W. Va.

***October 19-23—Cleveland, Ohio**
NATIONAL ASSOCIATION OF ASSESSMENT OFFICERS. Annual Convention (Hotel Cleveland). Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago 37, Ill.

***October 19-23, Dallas, Texas**
INTERNATIONAL CITY MANAGERS ASSOCIATION. Annual Convention (Statler Hotel). Exec. Dir., Orin F. Nolting, 1313 E. 60th St., Chicago 37, Ill.

October 20-23—Philadelphia, Pa.
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. 63rd Convention (Sheraton Hotel). Convention Mgr., Irvin Shulsinger, 130 W. 42nd St., New York, N. Y.

***October 26-31—Miami Beach, Fla.**
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE Annual Convention (Hotel Fontainebleau). Exec. Sec., Leroy W. Wike, 618 Mills Bldg., Washington 6, D. C.

***October 27-31—Philadelphia, Pa.**
NATIONAL TAX ASSOCIATION. Annual Convention (Sheraton Hotel). Exec. Dir., Walter J. Kress, 905 Payne-Shoemaker Bldg., Harrisburg, Pa.

***October 27-31—St. Louis, Mo.**
AMERICAN PUBLIC HEALTH ASSOCIATION. Annual Convention (Kiel Auditorium). Exec. Sec., Berwyn F. Mattison, M.D., 1790 Broadway, New York 19, N. Y.

October 28-31—Los Angeles, Calif.
AMERICAN WATER WORKS ASSOCIATION—California Section. Annual Meeting (Ambassador Hotel). Sec., H. J. Ongerth, Engineer, State Dept. of Health, 2180 Milvia St., Berkeley, Calif.

Municipal and Civic Publications

Publications on these pages are available from the addresses indicated in each listing and are usually free unless a price is given.

Public Works Planning

PLANNING FOR PUBLIC WORKS—*Special Assistant to the President for Public Works Planning. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.* 1957. 25 *pp.* 30c.

Planning ahead in public works is a subject of interest to all municipal officials. This illustrated pamphlet is a detailed discussion of the nation's present and future needs in public works and how to formulate plans to meet them. It covers the tests of good planning, four main steps in the planning process, and general criteria in planning.

The author stresses the need for coordination of physical and financial planning as well as the need to establish priorities according to urgency and essentiality of service.

Civil Service Commission Regulations Handbook

RULES AND REGULATIONS AND FORMS FOR CIVIL SERVICE COMMISSIONS IN PENNSYLVANIA BOROUGHS AND FIRST CLASS TOWNSHIPS—*Institute of Local Government, University of Pittsburgh, Pittsburgh, Pa.* 1958. 21 *pp. Paperbound.* $3.

This manual is designed to aid civil service commissions in carrying out their jobs. Although drawn up with Pennsylvania statutes in mind, the manual should prove of value to civil service commissions elsewhere. It gives definitions; describes the structure and organization of civil service commissions; discusses how to hold examinations and certify appointments; points out the procedure for suspensions; and, includes samples of forms frequently used.

Municipal Improvement

IDEAS FOR A BETTER CITY—*Compiled by Mary Bush. Published by the Municipal Technical Advisory Service, Division of University Extension, University of Tennesse in cooperation with the Tennessee Municipal League, Box 8260, Knoxville, Tenn.* 1957. 38 *pp.*

New ideas and techniques for municipalities are summarized in this report, which was compiled from 1957 issues of *Tennessee Town and City*. Originally drawn from various periodicals and publications, the ideas cover such fields as public works, police and fire protection, traffic and parking, refuse disposal, water and sewage, administration and government, and parks and recreation. The report contains a wealth of useful ideas ranging from Birmingham, Ala.'s use of the statue of Vulcan as a traffic guide to new developments in voting machines.

Pennsylvania Local Government

COMPARISON OF PENNSYLVANIA BOROUGH AND TOWNSHIP GOVERNMENT — *By Mary H. Foulkrod. Bureau of Municipal Affairs, Department of Internal Affairs, Commonwealth of Pennsylvania, Harrisburg.* 1958. 25 *pp. Paperbound.*

This manual provides a side-by-side comparison of three different forms of municipal government in Pennsylvania—the boroughs, and first and second class townships. Their differences in structure, functions and powers are clearly shown. The manual also discusses areas of permissible intergovernmental cooperation among these three types of government.

Appraisers' Manual

APPRAISAL AND VALUATION MANUAL, 1958—*American Society of Appraisers, LaSalle Bldg., 1028 Connecticut Ave., NW., Washington 6, D. C. Volume 3. Hard cover.* 550 *pp.*

This book is designed to serve as a handbook for appraisers. Articles by leading experts in the appraisal field provide up-to-date information on different types of appraisal. Also included are a glossary of words and phrases, the membership list of the American Society of Appraisers, and a bibliography of useful books and periodicals.

The book goes far beyond appraisals for property and land valuation. There is a chapter discussing the assessor's work. Also included are chapters on difficult valuation problems that assessors freuently face as well as helpful discussions on condemnation.

Swimming Pool Operation

POOLS AND BEACHES—*Papers presented at the Wisconsin Pool and Beach Operators Short Courses. Issued by the League of Wisconsin Municipalities, 30 East Johnson St., Madison 3, Wis.* 1958. 57 *pp. Paperbound.* $2.

This pamphlet contains papers presented at schools for beach and swimming pool operators, conducted periodically by the Wisconsin State Board of Health and sponsored by the League of Wisconsin Municipalities. The papers cover the following subjects: state supervision of public swimming; sanitation and pollution of pools; liabilities for injury; swimming pool regulations; beach control; wading pools; and, the principles, maintenance operation and care of chlorination equipment and filters.

Urban Planning

EXPLORING THE SMALL COMMUNITY—*By Otto G. Hoiberg. University of Nebraska Press. Lincoln 8, Nebr.* 199 *pp.* $3.50.

The small, independent municipality, not the suburb, the fractionated or Balkanized segment of a metropolitan area, can get earnest, practical advice on its development from this work by Dr. Hoiberg. Obviously, constructive planning and development in small community and large cannot be the restricted activity of a specialist, but must be the breath, philosophy and life of the entire community itself. The text discloses how a small rural community, working unselfishly together, can bring its people cultural, industrial, and municipal advantages that many have felt is completely beyond their means.

Civic Planning Organizations

CITIZEN ORGANIZATIONS FOR PLANNING: A REPORT ON ACTIVITIES—1956, AMERICAN PLANNING AND CIVIC ASSOCIATION—*City Planning Division, University of Arkansas, Fayetteville, Ark., Publication 602.* 31 *pp.*

Activities of citizen organizations throughout the country which supported or participated in neighborhood, city or metropolitan planning in 1956 are described in this pamphlet. Neighborhood associations with little money as well as large urban organizations are included in this listing.

Street Trees

THE TREES ON YOUR STREET—*By Desmond Muirhead, Portland General Electric Co., Portland, Ore.* 1957. 36 *pp. Paperbound.* $2.

An illustrated description of street trees, this booklet discusses such matters as what trees are best suited to city streets, the designing of streets in relation to formal, informal or group planting and the advantages and disadvantages of different types of trees.

The problems of street lighting and overhead wires, as well as those involved in tree-planting and care are included. The booklet is particularly aimed at Pacific Northwest communities.

Metropolitan Transportation Progress

PROGRESS IN METROPOLITAN AREA TRANSPORTATION—*General Electric Co., Schenectady, N. Y. Bulletin GER-1413.* 1957. 6 *pp.*

The General Electric Company has reprinted four articles about areawide transit progress from the *Philadelphia Evening Bulletin*. They examine existing transportation conditions in the San Francisco, Los Angeles, Chicago, Philadelphia, New York-New Jersey, Camden-South Jersey, Boston and Toronto metropolitan areas and these cities' plans for the future. The bulletin is illustrated with photographs and a map of proposed traffic improvements in San Francisco.

Politics

PR POLITICS IN CINCINNATI—*By Ralph A. Straetz. New York University Press, Washington Square, New York 3, N. Y.* 312 *pp.* 1958. $5.

Proportional Representation, a method of voting that is scientifically accurate and fair, but somewhat cumbersome was recently voted out of the Cincinnati charter after 32 years of use. Professor Straetz, who teaches government at New York University, analyzes this 32-year period, shows the PR system as the hero and its opponents as the villain. PR gives the elected body representation in proportion to the votes cast, and asks the voter to make his selection by numbered preference. Thus a 60%-40% election, for example, normally would bring in all or nearly all a party's candidates. Under the PR system, the minority party would receive representation in proportion to the votes. Opponents have complained of its complicity and of the difficulty in comprehending the system. The book itself would be stronger if it explained the method more thoroughly.

POLITICS, PARTIES, AND PRESSURE GROUPS—*By V. O. Key. Thomas Y. Crowell Co., 432 Fourth Ave., New York 16, N. Y. Fourth Edition.* 783 *pp.* $6.50.

An interesting discussion—principally of national politics, and to a lesser extent, state—that earns justification in the library of any serious student of government. It is well written and well documented. Often, the footnotes are more interesting than the text itself. It suffers, however, from Professor Key's apparent determination to ignore the political science of local governments. It is unfortunate that those who study government seem unaware of the quiet, but nationwide upsurge of political groups separate from national party organizations that are assuming responsibility for the important duty of local government and performing well.

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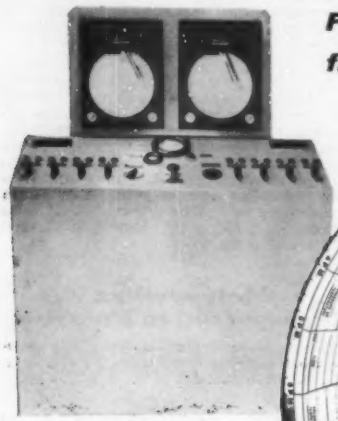

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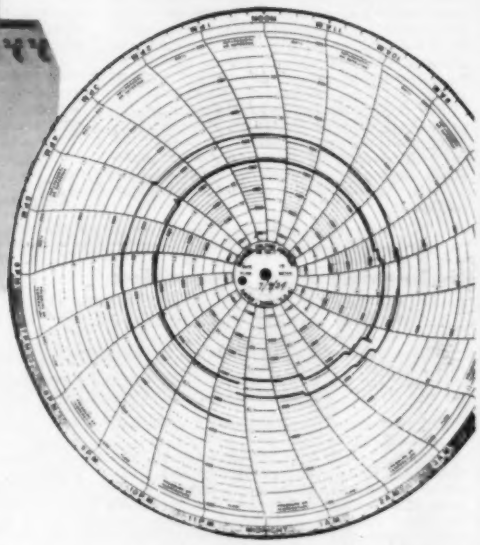

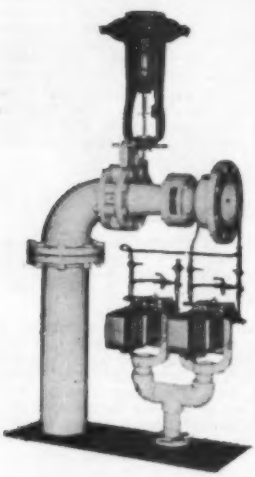

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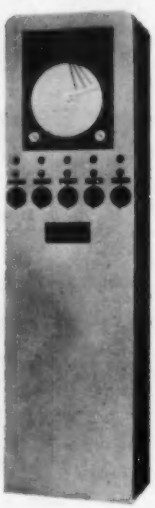

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State Supervision of Municipal Finances in Kansas

STATE SUPERVISION OF COUNTY AND CITY EXPENDITURES IN KANSAS—*By Clarence J. Hein. Governmental Research Center, University of Kansas, Lawrence, Kansas. Governmental Research Series No.* 16. 1957. 44 *pp. Paperbound.*

This report is a study of state supervision in Kansas of city and county finances and expenditures. It discusses the basic framework of state legislation controlling city and county revenues and the authorization and control of expenditures for local government activities. Considerable attention is devoted to the Cash Basis Law, the Budget Law, and the Municipal Accounting Law. The report also describes the organization, powers and supervisory activities of state agencies such as the Department of Post-Audits and the Municipal Accounting Board.

Planning Stamford's Future

PLANNING RECOMMENDATIONS FOR STAMFORD, CONNECTICUT—*Part IV of a Report on the City of Stamford, Economic Growth and City Planning Aspects. By Robert C. Weinberg, 400 Madison Ave., New York, N. Y., November* 1957.

Recommendations for planning the future growth of Stamford, Conn., a suburban city, are incorporated in this report. Among the 14 major proposals discussed by the author are: (1) recentralization of the downtown business district, so that it will become the hub of Stamford and five surrounding towns; (2) improvement of existing regional shopping areas as satellites to the central business zone, but discouragement of any new ones; (3) provision of more small neighborhood stores to serve immediate neighborhood needs; (4) provision of firmly drawn boundaries for the industrial area; (5) revision of zoning regulations and map; and (6) linkage of Stamford to other parts of the metropolitan area.

Louisiana Municipal Government

LOUISIANA MUNICIPAL HANDBOOK — *Compiled by the Bureau of Public Administration, Louisiana State University, Louisiana State University Press, Baton Rouge* 3, *La. Published with the cooperation of the Louisiana Municipal Association.* 1958. 207 *pp. Paperbound.* $3.

This useful handbook has been prepared by the Bureau of Public Administration of Louisiana State University for the purpose of providing interested persons with information concerning the organization and operation of municipal government in Louisiana. It discusses the law governing municipal corporations; the forms of municipal government; their regulatory powers; municipal courts; inter-governmental relations; and the general operation, functions and services of Louisiana municipal governments.

Subdivision Control

LOCAL GOVERNMENT CONFERENCE ON SUBDIVISION CONTROL—*Institute of Local Government, University of Pittsburgh, Pittsburgh, Pa.* 82 *pp. Looseleaf.*

A collection of papers delivered at the Institute of Local Government conference on subdivision control. While the discussions are a little more general than many would like, nevertheless they offer helpful suggestions. The list of general references for further study on this subject is particularly helpful.

Parks and Recreation

RECREATION PLACES—*By Wayne L. Williams. Reinhold Publishing Corporation, 430 Park Ave., New York, N. Y.* 1958. 302 *pp.* $18. Bibliography.

This large, beautifully illustrated "encyclopedia" of recreation is particularly useful for recreation officials, but should also be interesting to all municipally-minded people. While the book devotes a great deal of space to places of recreation, such as the home, industry, labor unions and shipping centers, it also thoroughly covers the history of recreation from pre-classic times. Also discusses are types of recreation ranging from sports activities to quieter relaxation; the recreational needs of different age groups; fields and lighting for all types of sports; and recreation planning from general principles to purchasing of equipment. Extra features are a description of playgrounds in Scandinavia and Great Britain and an excellent bibliography. The book should prove a valuable edition to the reference shelf of any recreation department.

Subdivision

SUBDIVISION IMPROVEMENT COSTS: WHO PAYS FOR WHAT?—*A Summary of Existing Practices. Compiled by Anna Sternheimer, Tennessee State Planning Commission, Nashville, Tenn. Publication No.* 282. 1958. 95 *pp., tables. Paperbound.* $1.

This is a mimeographed study of the Tennessee State Planning Commission, which surveyed subdivision practice in 144 United States cities with over 50,000 population. In addition, the study discusses the subdivision developer's responsibility for the initial cost of subdivision improvement in these cities; and the customary practices in obtaining recreational and school sites in 82 of these cities.

The study then takes up subdivision practices, improvements and responsibilities in municipalities of North Carolina, Virginia, Connecticut and Tennessee.

Annual Report

ANNUAL REPORT—1957, OF THE INCORPORATED VILLAGE OF GARDEN CITY, N. Y. (*26th Annual Report*). 39 *pp.*

This handsome Annual Report of Garden City can serve as a model for other communities in preparing their own reports. It deals with the achievements of the past year; plans for the future; schools and churches; the village administration; the police and fire departments; civil defense and the department of public works. It also covers finances, including a description of how each tax dollar is used, a budget summary and tax trends. The report contains an official village calendar and a directory. In style and format it is similar to the *Know Your Town* series of the League of Women Voters.

Zoning

THE ZONING PROBLEM AND ITS SIGNIFICANCE TO THE SAND AND GRAVEL PRODUCER—*By Vincent P. Ahearn, Jr., National Sand and Gravel Association, Munsey Bldg., Washington 4, D. C.* 38 *pp.*

Zoning, its principles, purposes and provisions in relation to the sand and gravel producer is the subject of this pamphlet.

Included are discussions of enabling statutes; reasonable exercise of police power; limitations on the authority of zoning boards; basic provisions of a zoning law; and dedication of land to its best use. The The economic role of the sand and gravel industry in community life and the responsibility of the sand and gravel producer to aid in the planning and administration of land use restrictions are also discussed.

Urban Planning and Municipal Public Policy

URBAN PLANNING AND MUNICIPAL PUBLIC POLICY—*By Donald H. Webster. Harper & Brothers, 49 E. 33rd St., New York 16, N. Y.* 1958. 572 *pp.* $8.

An authoritative test giving city officials, city planners, and all students of municipal government an insight into the philosophy of municipal government and the place that city planning has within it. Professor Webster's analysis of governmental framework and administrative factors is particularly astute. His discussion of zoning, land subdivision, urban renewal, and planning guidelines is instructive. His discussion of public works is probably the weakest portion of the text, but not sufficiently so to harm its usefulness.

American Municipal Congress

AMERICAN MUNICIPAL CONGRESS, 1957: HUMAN NEEDS IN THE CHANGING CITY—*34th Annual Meeting, San Francisco, Calif., December* 1957. *Copies available from American Municipal Association,* 1625 *H St., NW., Washington 6, D. C.* 137 *pp. Hard cover.*

This book contains the texts of the proceedings of the 1957 annual meeting of the American Municipal Association. The theme of the meeting was "Human Needs in a Changing City." Included among the major addresses and discussions were the following topics: how the city is changing; leadership responsibilities; civil defense; the city's responsibilities concerning youth and the aging, mental health, recreation and culture; and, fringe area problems and city expansion. with London, England and Miami, Fla. used as examples.

Land Surveys and Subdivision

SURVEYS, SUBDIVISION AND PLATTING, AND BOUNDARIES: WASHINGTON STATE LAWS AND JUDICIAL DECISIONS—*By Joshua H. Vogel, Ernest H. Campbell, and Wilbur K. Wilson. Bureau of Governmental Research and Services, Report No.* 137. *University of Washington Press, Seattle* 5, 1958. 175 *pp. Paperbound.* $3.

This report revises Report No. 96 of the same name, published in June 1949. It compiles and classifies the laws, judicial decisions and constitution provisions of the State of Washington relating to: location of tracts of land in relationship to water; rules for establishment and abandonment of rights of way; and, land boundaries and monuments. It is intended to be a working manual for surveyors, lawyers, and city and civil engineers.

State Budgets and Revenue

THE FINANCIAL CHALLENGE TO THE STATES: AN ANALYSIS OF STATE FISCAL DEVELOPMENTS, 1946-1957. *The Tax Foundation, Inc.,* 30 *Rockefeller Plaza, New York* 20, *New York. Project Note No.* 43. 1958. *Tables. Paperbound. Single copies available on request.*

This analysis by the Tax Foundation, Inc. shows that the states are now in a "precarious" financial condition, with no relief in sight. The report declares that not only must the states have new taxes, but also they must distinguish between those programs which are absolutely essential and those which are merely desirable. It points out that revenue needs can be eased by abandoning nonessential activities and through economic operation; and, by full coordination of federal, state and local relationships.

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Other Reports Received

Administration and Government

CULVER CITY, CALIF.—Citizens' Handbook for Municipal Government. City Council. 1958.

MICHIGAN—The Voter and the Michigan Constitution in 1958. Edited by Robert H. Pealy. Bureau of Government, Institute of Public Administration, University of Michigan, Ann Arbor, Mich Michigan Pamphlet No. 27. 1958.

MOUNT STERLING, KY.—Where Bluegrass and Mountains Meet: A Community Profile of Mount Sterling and Montgomery County, Ky. Bureau of Community Service, University of Kentucky, Lexington, Ky. Kentucky Community Service Series No. 18. 1957.

SAN ANTONIO, TEXAS — Organization and Functions of Citizen Boards and Commissions. 1958.

Air Pollution

CINCINNATI, OHIO — 1957 Annual Report of the Bureau of Air Pollution Control and Heating Inspection, Department of Safety.

COLUMBUS, OHIO — 1957 Annual Report of the Division of Smoke Regulation and Inspection, Department of Public Safety.

Airports

GENERAL—Federal Airport Projects Announced for 1959. Office of the Secretary, U. S. Department of Commerce, Washington 25, D. C.

Good Roads MACHINERY

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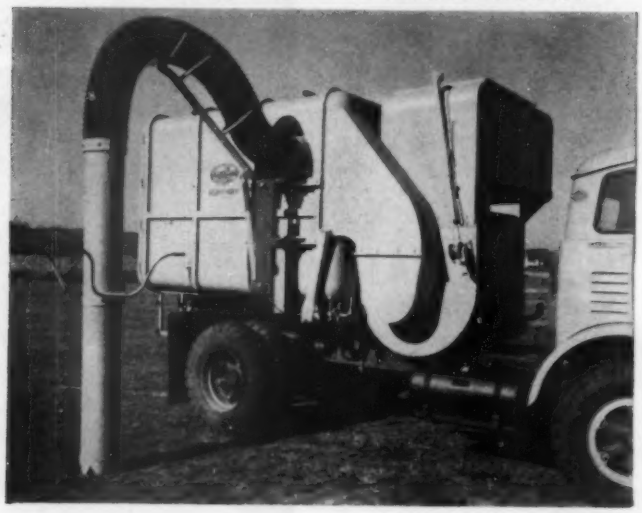

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Proved successful for removal of litter, leaves and other accumulated debris from city streets, highways, parks, etc., the Good Roads Scavenger, equipped with catch basin attachment, cleans catch basins in a fraction of normal cleaning time.

Wet or dry refuse — paper, leaves, twigs, stones, bottles, cans, etc., are sucked into the Scavenger hopper, for easy disposal, without clogging. Deep-reaching snout cleans catch basins in minutes — a job that normally takes two men many hours — it leaves no mess.

Cities, villages and townships report savings in removal costs up to 50 percent. Faster coverage . . . 2-man operation . . . fewer trips to dumping sites . . . extremely efficient pick-up of all kinds of materials — all add up to substantially lower operating costs.

The ultimate in litter removal, Scavenger's powerful industrial engine sucks debris through its large intake tube into the big capacity all-steel hopper. Exclusive dust trap eliminates all dust. Available truck or trailer mounted.

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Annual Reports

ANN ARBOR, MICH.—Progress Report for the fiscal year 1956-1957. . . . Your City Government under the New Charter. Office of the Mayor.

BROOKLINE, MASS.—1957 Annual Report of the Town Officers and the Town Records.

FERGUSON, MO.—1957 Annual Report.

GREELEY, COL.—Operation Greeley, 1957 Annual Report.

Finance and Taxation

CHICAGO, ILL.—1958 Program of Expenditures.

MICHIGAN—1958 Michigan Municipal Wages, Salaries and Fringe Benefits. Michigan Municipal League, Ann Arbor, Mich. Information Bulletin No. 81. 1958. $3.50.

Planning, Zoning and Housing

DYERSBURG, TENN.—Citizen Participation in Urban Renewal. By William B. Nixon and Joseph M. Boyd, Jr. Tennessee State Planning Commission, Nashville, Tenn.

GENERAL—Workable Program for Slum and Blight Control. Housing and Home Finance Agency. Available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

NEW YORK, N. Y.—Not Without Hope: A Report and Recommendations on Family Relocation. Committee on Housing, Community Service Society. 1958. 75c.

Utilities and Public Works

JAMESTOWN, N. Y.—1957 Annual Report of Board of Public Utilities.

LOS ANGELES, CALIF.—1956-1957 Annual Report of Bureau of Engineering, Department of Public Works.

Sewerage and Sewage Purification

ALEXANDRIA, VA.—Toward a Cleaner Potomac River. Annual Report of City Sanitation Authority for the year ending September 1957.

BUFFALO, N. Y.—1956-1957 Annual Report of the Buffalo Sewer Authority.

EL PASO, TEXAS—1957-1958 Annual Report of the Sanitation Department.

GENERAL—Inventory of Municipal and Industrial Waste Facilities in Colorado, Connecticut, Georgia, Maine, Idaho, Washington, Wyoming. (Seven Reports.) U. S. Public Health Service, U. S. Department of Health, Education and Welfare. Available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 1956.

Traffic

EAST LANSING, MICH.—Extracts from Traffic Rules.

GENERAL—Highway Transportation Legislation; Part II, Highway Taxation and Finance. National Highway Users Conference, National Press Bldg., Washington 4, D. C. 1958.

Water Supply and Treatment

SAN DIEGO, CALIF.—1956-1957 Annual Report of the Water Department.

Mail Bag

(Continued from page 7)

sale of the property at a reduced price to the Friends Society, and (3 the rehabilitation of such property and its rental or sale to private persons. The City of Cleveland, in an urban renewal plan for a combined redevelopment and rehabilitation project, provided with respect to the rehabilitation portion of the project that, if a private owner failed to rehabilitate his property in conformity with the plan, the city would acquire the property for rehabilitation. This, of course, is a possible remedy but it may prove to be very costly and may tie up city funds in deteriorating properties.

The area to which your editorial is directed is certainly one which is wide-opened for exploration as to its possibilities for use in the fight against blight and deterioration.

JOSEPH GUANDOLO

EDITOR'S NOTE: Mr. Guandolo is the Associate General Counsel, Housing and Home Finance Agency, Washington, D. C.

White Shoulder Lines

On page 56 of your November issue I find a note on the outer-edge white line (Free Catalogs No. 561) indicating your editor thought it was a mechanical marker.

I can understand that, in the pressure of work, our data could readily mislead him. We have had several inquiries for the "marker." This might help to explain the matter.

The importance of an outside edge line (white or yellow) impressed me several years ago and I offered to pay for a test on it by the Connecticut Highway Department. The test was made, and a further test on a section of the Hutchinson River Parkway, reported to me by the Highway Superintendent, showed 40 accidents in the five months before painting and only 14 in a like period thereafter, with no other factors changed.

The Trustees of the Dorr Foundation felt justified in a publicity campaign to extend its use throughout the country. While at this time it is not considering any commercial operations in connection with it, I have often thought that if an opportunity occurred it could do so, showing that any earnings went into the support of the Foundation and being quite convinced that any such undertaking should pay the same taxes that any other commercial enterprise paid.

The Dorr Foundation was established 15 years ago for general useful and educational purposes as a nonprofit organization with such a small endowment that I have used the word "catalytic" before the word "Foundation" to avoid misleading others.

The Foundation also undertook last summer to maintain a specialized science course for high-school boys already interested in science, which resulted in 24 boys spending 7 weeks most satisfactorily to themselves and faculty in science exposure.

It is also supporting a study under the auspices of the Committee on the Aging as to what the scientist—either industrial or academic—wishes to do on statutory retirement, feeling that in both cases our work tends to increase the overall scientific manpower of the nation.

The head of one of our largest foundations said to me recently that it was more difficult to get good ideas than money, and I may say that we feel, with the freedom that comes from small size, we have a small list of projects that comes under this "more valuable than money" classification which we could undertake if we received contributions therefor.

JOHN V. N. DORR
The Dorr Foundation
Westport, Conn.

Sell Prison-Made Goods Within the State

I have just read the comments regarding cities buying prison-made goods as reported in your April issue ("On Buying Prison-Made Goods," p. 164) and wish to add the thoughts of a manufacturer of street and traffic signs who has fought this problem for years.

We strongly feel that such goods are definitely unfair competition and heartily agree with C. E. Wiberg, city purchasing agent of Birmingham, Ala., who said, ". . . there is such a thing as going overboard in lending a hand to a socialistic state of government."

We have proof that prisons not only solicit traffic sign business throughout their own states, quoting prices that are impossible to compete with due to the obvious advantage of cheaper labor, but they sell such products in adjoining states. We believe the practice of going outside a state is unconstitutional, but as yet have been helpless to do anything about it.

Why should private industry be constantly forced to pay higher wages and taxes and then have its taxes used to finance a state operated project that deprives it of legitimate business?

W. L. DESLOGE, *President*
Grimm Stamp & Badge Company
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A NEW CONCEPT in ultra-clean sweeping is introduced by the new Tennant "100" Vacuumized Sweeper. In even the driest weather it sweeps extra-clean; no water spray . . . no mud streaks.

NO CLOUD OF DUST behind this sweeper! It stirs excitement instead of dust wherever it's shown. Picks up both heavy litter and fine dust. Special 540 sq. ft. filter catches dust particles as fine as 5 microns . . . invisible to the human eye!

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Why the new TENNANT 100 gets the dirt most sweepers miss

The revolutionary new TENNANT *Vacuumized* Sweeper gets the dirt that most conventional sweepers miss. Here's why this is possible:

Powerful broom-and-vacuum system instantly picks up *fine dust and dirt* . . . as well as heavy, bulky debris. Does NOT use water spray!

New type main broom adjusts to constant diameter. Assures uniform sweeping results during *entire* life of broom. You'll see the difference.

Direct-loading hopper fills from top without a conveyor! Automatically loads "heaping full"—well in excess of rated hopper capacity (1¾ yds.).

Has no conveyor. Permits compact, easy-handling design and short 9'2" turning radius. Allows efficient, wide-range use in areas where larger conventional sweepers are impractical.

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Kenneth N. Cundall Named President of Asphalt Marketing Concern

K. N. Cundall

Word from C. W. Turner, president of American Bitumuls & Asphalt Company, subsidiary of Standard Oil of California, is that K. N. Cundall has been appointed president of International Bitumen Emulsions Corp., a subsidiary of American Bitumuls.

Mr. Cundall has had a long and distinguished career in the engineering field. Following his graduation from Stanford University in 1923, with a degree in chemical engineering, he joined the Pacific Gas and Electric Company as a research chemist. While with PG&E, he co-authored a process for the recovery of sulphur from manufactured gas, and in 1926 was awarded the Gold Medal of the Pacific Coast Gas Association for this technical achievement.

In 1929, he moved to Standard of California, in Richmond, as a design engineer in chemical treating plants and also as a research chemist. In 1933 he transferred to American Bitumuls & Asphalt Company as a field engineer, working in the eastern territory for a period of nine years. During this time, he also acted as consultant to the British Bitumen Emulsions, Ltd. on airport work in England and Scotland. In 1943, Mr. Cundall shifted to Oronite Chemical Company as sales manager, but returned to American Bitumuls & Asphalt Company in 1944, as manager of Laykold sales and advertising

K. N. Cundall is a registered professional engineer, an associate member of both the American Society of Civil Engineers and the American Society of Refrigerating Engineers. He is also a member of Alpha Chi Sigma, the professional chemical fraternity, and a national director of the National Industrial Advertisers Association. He succeeds Wayne Summers as president of International Bitumen Emulsions Corporation. Mr. Summers has retired after 42 years in the asphalt marketing field.

Truck-Mounted Backhoe Moves Quickly from One Job Site to Another

OTTAWA STEEL DIVISION of YOUNG SPRING & WIRE CORP. OTTAWA, KANS., has designed a truck-mounted backhoe for Chevrolet ¾ ton trucks (and larger) to meet the growing demand for a trench-digging machine that can be moved quickly from one job site to another with minimum loss in production time.

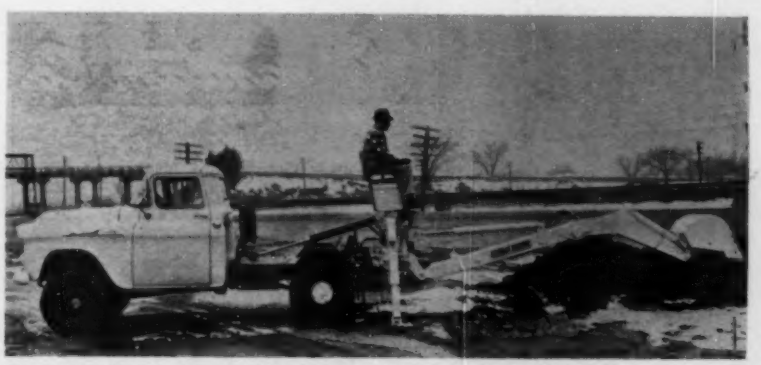
This truck-mounted unit digs 12½ feet deep in any position of its 190-degree swing, which is continuous without changing pins or moving cylinders. A turret-type seat pivots with the boom. It is offset so the operator can see without leaning to one side. Seat height is also vision-engineered for top efficiency when digging deep trenches or loading trucks.

Outrigger, boom structure and mechanism are supported by an A-frame constructed of strong boxed sections and electric welded to form an extremely rigid foundation for digging and loading at any angle up to 95° right or left from centerline of tractor.

The "big muscle" power of the Ottawa hydraulic system is converted to 7,000 pounds of digging force by the use of 10 double-row, sealed ball bearings at major points of pressure and wear.

Designed to eliminate maintenance, the new Ottawa backhoe has reverse-mounted bucket and crowd cylinders, which places the highly polished rods up and away from rocks and dirt. These double acting cylinders are rod fed to do away with exposed hydraulic lines and hoses. Ball bearings at 10 points of maximum force and rotation are lubricated and sealed for life.

The truck-mounted backhoe has many design features that make it relatively



The Ottawa backhoe, mounted on a Chevrolet truck, digs 12½ feet deep in any position of its 190-degree arc. It is as easily mounted as it is dismounted.

Purchasing News | TIME-O-MATIC

"BANTAM is the best machine we've ever seen for sewer and water work". . .

And this BANTAM is kept busy 8 hours a day, 5 and 6 days a week, trenching for sewer and water lines, backfilling, unloading water pipe, handling heavy valves and dozens of other chores. "We work the socks off our BANTAM. It is never idle," says Supervisor Crews. "We can take it anywhere."

Speeds operations 25-50%

Here's a typical day's operation: Drive 8-10 miles to first job; dig 200′ of 3′ ditch; then drive across town and dig 200′ more. Between jobs the BANTAM unloads pipe. It has unloaded approximately 100 trailer loads of 12″ and 16″ cast iron pipe in the last 4 months.

Speed, versatility and low cost are the chief reasons why BANTAM rates first with municipalities like Winston-Salem. If these factors are important in your operations, see your BANTAM distributor. Or use the coupon to obtain literature.

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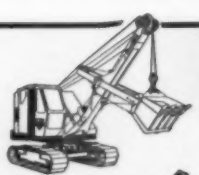
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A special hydraulic jib on the 4,000-pound capacity Daybrook Power Loader, developed for use by fleet owners or contractors to maneuver tires for repair, not only provides versatility of lifting movements but is also used to nudge huge tires on or off rims.

Tube repair (such as on the 37.5 x 33 tire in the accompanying photograph) can be quickly made in the field by either the hot patch method or by cold patching with acid cure. When tire repair is extensive, the Power Loader can easily lift big tires onto the truck platform to be taken to a central repair location.

The hydraulically-operated Power Load-

er is powered by an auxiliary 4-cylinder converted Willys Jeep engine. Two of the four cylinders provide the crane's hydraulic power; the other two cylinders have been adapted to act as an air compressor to operate air-powered tools. Tools can include 50- and 30-ton jacks to lift equipment, an air impact wrench to remove or tighten lugs, studs, wheel nuts, etc.; a tool to break bead tires, an inflating attachment, etc.

For further information, write DAYBROOK HYDRAULIC DIVISION, YOUNG SPRING & WIRE CORP., BOWLING GREEN, OHIO, or you may use the Post Card on the insert following Page 54. Circle No. 797.

Maps for City Planning

To emphasize the diversification and extensiveness of its activities, the Sanborn Mapping Company, 629 Fifth Ave., Pelham, N. Y., has established a Special Service Division, which will concentrate on mapping services for city and regional planning agencies and public utilities.

Heading the new Division will be Vice President Carroll F. Doane, who has been associated with the company since 1923. R. B. Hollaman, company secretary-

Purchasing News

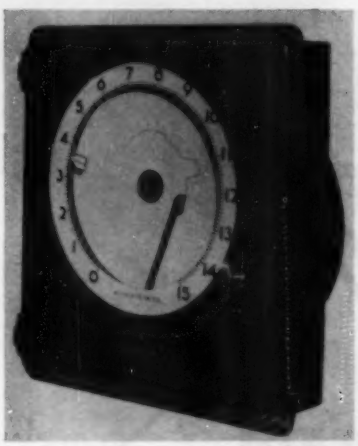
treasurer, has been named manager of Utility Services; R. E. Barraclough is director of planning activity, Special Service Division.

Sanborn Map Company has been engaged in fire insurance mapping for almost a century, but has gradually expanded its mapping services to include land use, property ownership, utility transmission and distribution lines, zoning, building condition, population distribution, parking and community facilities and traffic flow, etc. for municipal, county, state and federal governments and for private enterprise, including public utilities.

In its Special Service activity, Sanborn calls upon a vast accumulation of land use information which it has acquired since the inception of land mapping in the middle of the 19th Century. The company has mapped almost every town in continental United States with a recorded population count of more than 2,000 persons.

Measures Liquid Flows Over Parshall Flumes and Weirs

With the Stevens Recorder, Type B-FT, accurate graphic and visual registration of liquid flow in sewage treatment plants is made at low cost. This recording, indicating and totalizing meter measures liquid flow over Parshall flumes and weirs.



Sewage treatment plants in rapidly growing communities and in other installations where liquid flow may increase substantially beyond original anticipated limits will find the interchangeability of Type B-FT flow cams and flow conversion gears to be of real economic advantage. With a change of cams and gears, this recorder is able to operate with a different size flume or accommodate a greater range of flow than that for which it had been originally designed. This change does not require factory service. The change from a weekly to a daily graphic time scale, or vice versa, is accomplished by repositioning one gear.

The Type B-FT can be direct float operated or remotely controlled. It is available for wall or switchboard mounting, or with cabinet for mounting out-of-doors directly over the float well. Complete information on this versatile recording instrument is contained in *Bulletin* 25. For your copy, write LEUPOLD & STEVENS INSTRUMENTS, INC., 445 NE FLISAN ST., PORTLAND 13, ORE., or you may use the Post Card on the insert following Page 54. Circle No. 782.

Mobile Lighting Unit with Telescopic Pole

A completely self-contained mobile lighting unit which generates its own electricity and is applicable to emergency and other outside work where a good light source is needed, has been introduced by MERCOTEC CORPORATION, 24 STONE ST., NEW YORK 4, N. Y.

Unusual feature of this unit is its telescopically retractable light pole, which can be extended to a height of 25 feet and which, for transportation, retracts to 8 feet. At the top of this anodized aluminum pole is an adjustable reflector with lighting capacity of 600 or 1,000 watts (six 100-watt or five 200-watt bulbs) and a red obstruction light. The reflector can be tilted to throw light in a given direction. It is said to be able to light an area of about 260

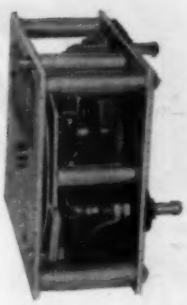
TIME-O-MATIC

FLASHERS

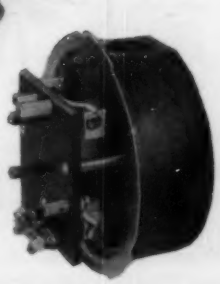
Jack Mounted

Time-O-Matic Jack Mounted Flasher in Standard Meter Case

Single or two circuits, every model with built-in eliminators. Available with standard meter case (above) or separately with Jack mounting panel (below).



Time-O-Matic Jack Mounted Flasher Only



Time-O-Matic Jack Panel in Meter Case

SPECIFY DEPENDABLE TIME-O-MATIC CONTROLS

•

TIME-O-MATIC, INC.

P. O. Box 850
1108 Bahls Street
Danville, Illinois, U. S. A.

feet in diameter without shadows, and that a newspaper can be read at 500 feet distance from the pole.

The light pole is mounted on a chassis with a single spring-torsion axle and two automobile tires. The power source can be either a 3-hp air-cooled, 2-stroke or 4-stroke gasoline engine, coupled directly with a 24-volt, 1,000-watt generator. A 40 psi air compressor pneumatically activates the telescopic pole; it is also driven by the engine.

Weight of the entire unit is 705 pounds. It can be transported and set up anywhere, and if desired can be furnished without trailer carrier for stationary installation or mounting on truck, flat car, etc. Every part of the unit is said to be corrosion resistant. It attaches as trailer to any truck or passenger car, and can be easily towed to any "job site".

Additional information on the Asper telescopic light pole is available from the manufacturer, or, if you prefer, you may use the Post Card on the insert following Page 54. Circle No. 787.

DEATH TO THE MOSQUITO

Nobody likes the mosquito. It's banned in Boston . . . barred from Buffalo . . . kicked out of Kokomo. It's being routed from resorts . . . inched out of industry . . . condemned by cities.

It's enough to make Mr. and Mrs. Mosquito give up! But, no sir! Mosquitoes have been here for millions of years and intend to stay. That's why LETHANE 384 is now used for adulticiding sprays, a new way with a recognized weapon to carry the fight to mosquitoes. The fog machines attack by land. Planes swoop down in aerial fogging raids. Down go the mosquitoes . . . down they stay! For that's the job of LETHANE 384—quick knockdown and high kill.

To help in the fight against mosquitoes, write for full details on how economical and effective it is to include LETHANE 384 in your fogging concentrates and adulticiding sprays.

LETHANE is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.

Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

Stationary and Portable Air Compressors

Le Roi air compressors may be obtained in either stationary or portable models. Stationary units range in size from ½ to 100 hp; portables from 85 to 600 cfm.

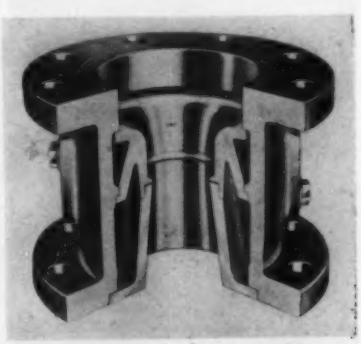
Stationary compressors of the smaller unit type—½ to 15 hp—operate from 80 to 250 psi, depending on the compressor model. They are air-cooled, pressure lubricated, and available as tank-mounted units or on bedplates only. The larger S2 stationary compressors range from 25 to 100 hp. They, too, are air-cooled and are mounted on bedplates. Rated capacities range up to 450 cfm at 125 psi. Nationally-known 40 C. rise motors are supplied with complete units.

Seven sizes of portable air compressors, ranging from 85 to 600 cfm, are manufactured by Le Roi. Both rotary and reciprocating models are available. The 85-, 105-, and 210-cfm models are powered by a Le Roi gasoline engine or an IH diesel. The 250-, 365-, and 600-cfm units are powered by IH diesel engines. The self-propelled Tractair, a combination tractor-air compressor, is manufactured in the popular 125-cfm size. It is powered by a 42-hp Le Roi gasoline engine.

For additional information on these compressors, and for their municipal application, write WESTINGHOUSE AIR BRAKE CO., LE ROI DIVISION, MILWAUKEE 1, WIS., or you may use the Post Card on the insert following Page 54. Circle No. 784.

Twin-Throat Venturi Tube

A completely new venturi for metering of water, sewage, air and other fluids and gases is announced by G. E. Hauer, manager of the Industrial Specialties Division of Infilco Inc. Originally designed by Bopp & Reuther of Manheim, Germany, this new Twin-Throat Venturi produces higher differential pressure or lower head

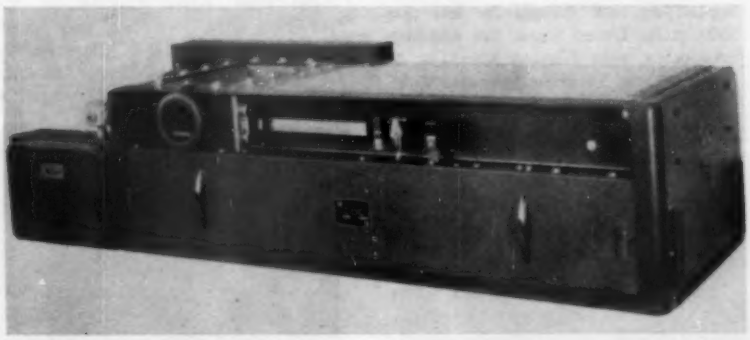


Cross-section of the Twin-Throat Venturi tube.

loss in a much shorter laying length than other types.

The Infilco Twin-Throat Venturi is available in a full range of sizes, from 4 inches to 48 inches. Standard housings are of high-tensile grey iron and insert throats are of bronze. Cast steel and alloys can be furnished for high pressure and corrosive fluids. Accuracy of uncalibrated tubes is ±2%; specially calibrated tubes will have an accuracy of ±0.5%. Complete information, including performance graphs, data for sizing specifications, etc. are described in *Bulletin No.* 1021, available from INFILCO, INC., P. O. BOX 5033, TUCSON, ARIZ., or if you prefer, you may use the Post Card on the insert following Page 54. Circle No. 818.

Measures and Controls Flow of Dry Chemicals



The Pneu-Weigh, a new belt (stream) weigher, meets the needs of continuous process industries for measurement and control of flow of dry materials at low to medium rates from 0 to 3,000 pounds per minute. It is manufactured by the OMEGA MACHINE CO., a division of B-I-F Industries, Inc.

Accuracy of the Pneu-Weigh is held within ± ½% of the maximum rate, and it operates over a 10:1 range, which can be converted to 50:1 by the Omega Variable Speed Belt Drive. Design is rugged and dependable throughout, featuring positive chain drive to eliminate slippage, and continuous integration which totalizes correctly regardless of belt speed.

For additional information about the Pneu-Weigh, write to the company, at 345 HARRIS AVE., PROVIDENCE 1, R. I., or you may use the Post Card on the insert following Page 54. Circle No. 790.

Jaw-Action Bucket Improves Loader Performance

A heavy-duty truck loader with a versatile self-loading bucket incorporating a hydraulically-operated jaw is now in production, according to word received from the M-B Corporation of New Holstein, Wis.

When in operation, the jaw swings down, reaches out to meet ground level approximately 13 inches forward of the lip of the bucket, and smoothly completing its closing cycle pulls in and holds the "full load" bite in the ½-cubic yard bucket of heavy-duty capacity.

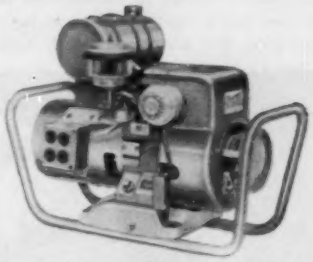
This powerful jaw action eliminates ramming of the truck into a stockpile to obtain full bucket, and so does away with shock loads on the truck, its frame or the loader mechanism. Even when picking up small piles, the jaw fills the bucket quickly, easily and completely. There is no "chasing" of material and no need for additional crew to sweep or shovel into the bucket.

The M-B Loader is designed to fit almost any type of truck—4-wheel drive units, cab-over, tilt cab and conventional trucks. Although the aforementioned bucket is standard, larger buckets are available for special jobs.

Municipalities will find numerous applications for the M-B Truck Loader—sand and gravel operations, sweeper pile pick-up, snow removal, street and highway maintenance, leaf pick up are but a few. For complete information, write M-B CORPORATION, NEW HOLSTEIN, WIS., or you may use the Post Card on the insert following Page 54. Circle No. 803.

Onan
ELECTRIC PLANTS

ELECTRIC PLANT
NEWS



Carrying frame model—*Lightweight tubular aluminum frame for one or two-man carrying. Easily lifted in and out of pickup or around on the job site.*

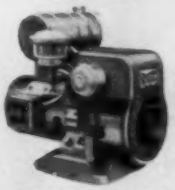
Dolly-mounted model—*One man wheels it anywhere. Specially useful on such jobs as hedge trimming, grass clipping, construction. Big, easy rolling rubber tired wheels.*

New 1500 watt D.C. Onan Electric Plant

Here's more efficient portable power for all 115-volt D.C. and universal motors or tools and equipment. This new Onan power package, Model 115AK-115M, gives you more power per pound of electric plant, more power per gallon of gasoline. Recommended specially for turf maintenance, emergency rescue service, and fire department use.

Direct-connected, compact design

Rugged, single-cylinder, 4-cycle, Onan air-cooled engine starts quickly in any weather. Heavy-duty splash-proof generator is direct-connected to engine, making a rigid, compact, long-life unit. Standard equipment includes manual starter, oil-bath air cleaner and 4 plug-in receptacles. Carrying frame, 2-wheel dolly and recoil starter are optional at low cost.



Standard Model *For installation in maintenance trucks, on fire rigs etc. Converts to portable model with carrying frame or dolly.*

See your Onan distributor or write for information

D. W. ONAN & SONS INC.
2652A University Avenue S. E.
Minneapolis 14, Minnesota

Bags Litter and Trash

The Tarco "Litter-Shark" is a powerful, push-type vacuum cleaner that takes the stop, stoop and touch out of litter pickup. It has been designed to pick up and bag light and heavy trash—loose newspapers, paper cups and plates, pop corn boxes, programs, ticket stubs, leaves and grass cuttings, tin cans, cigarette butts.

One-man operated, the "Litter-Shark" pushes easily on 10-inch diameter rubber-tired wheels. It weighs less than 100 pounds, and can be used to suck up litter from sidewalks and gutters, parking lots, playgrounds, parks, drive-in theatres, outdoor restaurants, shopping centers, etc. It performs equally well on smooth, hard, grassy, or stone cover or loose gravel surfaces.

The Model LS-1 Tarco "Litter Shark", complete with four heavy litter bags and bag-carrying rack delivers for less than $300 in the United States. For additional information, write TARRANT MFG. CO., 23 JUMEL PLACE, SARATOGA SPRINGS, N. Y., or you may use the Post Card on the insert following Page 54. Circle No. 801.

Appoints Two Distributors, Extends Another's Territory

The CONSTRUCTION MACHINERY DIVISION of CLARK EQUIPMENT COMPANY, Benton Harbor, Mich., manufacturers of the "Michigan" line of tractor shovels, tractor dozers, tractor scrapers and excavator cranes, has appointed Story Brothers, Inc., 4130 Clinton Highway, Knoxville, Tenn., and Western Machinery Company, N. 808 Division St., Spokane, Wash., to sell and service its line. Also, the Division has extended the sales territory of Spreitzer, Inc., Cedar Rapids, Ia., to include 31 counties in Illinois.

Agile Tractor Versatile in Application

The "Crab", Napco Industries, Inc., new four-wheel drive, four-wheel steer tractor, gives approximately 45% more drawbar pull than a conventional tractor. Its three-position selector permits the operator to

These Cities, States & Turnpikes Are Doing More Work and Paying Less with the

NETCO Catch Basin Cleaner

Penn. Turnpike Comm.
East Cleveland, Ohio
Cumberland, Maryland
Indianapolis, Ind.
Lansing, Michigan
Jersey City, N. J.
Worcester, Mass.
New York, N. Y.
Boston, Mass.
Chicago, Ill.

Easily mounted on any short wheel base truck with 8 ft. in back of the cab, the NETCO with orange peel or clam-shell bucket can be operated continuously, averaging 20 to 30 catch basins a day Hoisting capacity up to 1500 lbs.

NETCO does almost three times as many basins a day at less than half the cost per basin compared with old-fashioned manual methods.

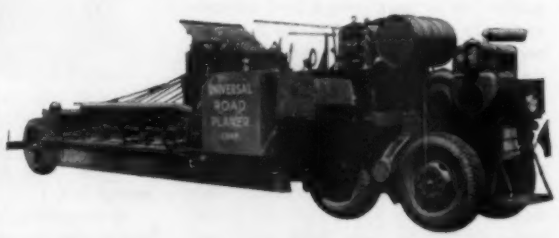
Send for our 6-page descriptive folder

NETCO DIVISION
CLARK-WILCOX COMPANY
118 Western Avenue
Boston 34, Massachusetts

HEATER PLANER METHOD IS QUICK, CERTAIN AND ECONOMICAL, SAVES DOLLARS - LOTS OF THEM

1. Make pavement surfaces smooth as new, by planing only.
2. Planing in advance of resurfacing cuts costs 50%.
3. You need not invest money in expensive, single purpose equipment.
4. We do work on contract basis.

LET US GIVE YOU A PROPOSAL



UNIVERSAL ROAD PLANER CORP.
50 Oak Street, Cincinnati 17, Ohio **CA 1-6022**

Representatives in most principal U. S. Cities, Havana, San Juan, Mexico City, Montreal, Buenos Aires.

Write for free brochure

choose front-wheel steer, front and rear-wheel steer, or oblique steer (both front and rear wheels turn in the same direction) from automotive-type wheels.

Power steering, a standard feature on all "Crab" models, makes these units fast and responsive, and turning is effortless—even on the roughest terrain. Operator fatigue is lessened and working efficiency is increased with power steering.

A Continental Model F162 4-cycle, liquid-cooled gasoline engine with 162-cubic inch displacement developing 52 bhp at 2,800 rpm and 125 foot pounds of torque at 1,200 rpm comprise the power unit of the "Crab". A variable speed governor, 6-volt automotive-type ignition, electric starter, generator, battery, oil bath air cleaner and muffler are also standard equipment.

The Napco "Crab" transmission permits the tractor to reverse without stopping or shifting of gears. Torque converter transmission sends a smooth constant flow of power to axles and provides the right speed for every job. With torque converter transmission the "Crab" can furnish maximum horsepower at slow speeds and provide increased torque whenever needed.

Depending upon the attachment, the adaptable "Crab" can dig, doze, load, haul, sweep, plow, lift. Four-wheel hydraulic brakes, mechanical PTO, an extremely short turning radius, 360-degree swivel seat for the operator, four speeds forward and four speeds reverse contribute to the agility of the Napco "Crab".

For additional information, write NAPCO INDUSTRIES, INC., SEVENTH ST., NORTH LYNDALE, MINNEAPOLIS, MINN., or you may use the Post Card on the insert following Page 54. Circle No. 786.

Beach Rake Attachment for Loader

When Pettibone Mulliken's new beach rake atachment joins the company's Speed Swing loader, the result is a highly versatile and serviceable machine for use in combing up debris at beaches, parks and other public grounds. The loader's 180-degree boom swing enables it to work much faster by eliminating up to 90% of normal machine maneuvering requirements. Fork tines on the rake can be set to dig up to 1 foot in sand; the fork will clean an 8-foot path in a single pass. Operation proceeds along the following line: boom swings 90 degrees to right or left, picks up load, then unloads into a 10-foot high truck from side or rear.

For complete operational details, and specification data, write PETTIBONE MULLIKEN CORP., 4710 W. DIVISION ST., CHICAGO 51, ILL., or you may use the Post Card on the insert following Page 54. Circle No. 809.

Big-Capacity Front-End Loader Has New Features

An entirely new Payloader model, the Hough H-25, incorporates several new design features. It is the first rubber-tired, front-end loader to have a rated capacity of 2,500 pounds and a turning radius as short as 6 feet (to the outside rear hub).

Power steering is standard and provides greater maneuverability. Power-shift transmission, which is full-reversing and has two speeds, and a new torque converter have been matched to provide the maximum in speed of movement and ease of operation. The power transfer differential automatically transfers more torque to the drive wheel with the best footing when slippage is encountered.

A choice of gasoline, diesel or LPG power is offered with the H-25. The 44-hp gasoline engine is equipped with wet sleeve cylinder liners for easier maintenance and the overhead valve design provides for greater efficiency. Maximum protection is given the engine by triple air cleaning system. And the H-25 fuel tank has sufficient capacity to permit full 8-hour operation without refueling.

The H-25 has a 12-volt electrical system and, in addition to the usual standard gauges, is equipped with an Hourmeter. Large-diameter hydraulic brakes have an automatic adjustment and are sealed against dirt, dust and solid foreign material.

Interchangeable front-end attachments for the H-25 include pick-up sweepers, hydraulic grab devices, crane hook, tine buckets, scrap buckets and blade snow plows. For additional information, write THE FRANK

SAFE!

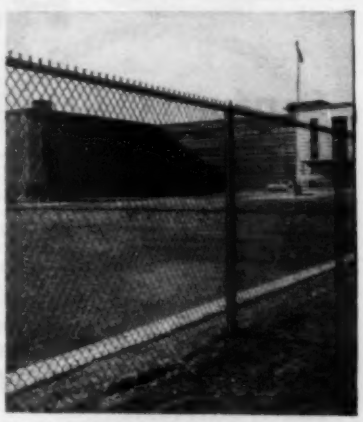
Protected by genuine

ANCHOR FENCE
Division of ANCHOR POST PRODUCTS, INC.

Provide children with a safe place to play—eliminate needless traffic worries with one decision—installation of a genuine Anchor Chain Link Fence.

Anchor's exclusive features meet the special needs of parks, recreation centers and schools: deep-driven anchors keep the fence firmly erect for years—clean-cut square corner posts remove potential toe and hand holds—handsome, square sag-free gates—steel chain-link fabric galvanized *after* weaving for longer life.

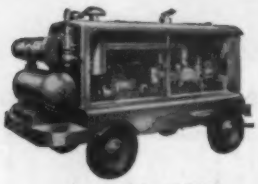
Every Anchor Fence is backed by a 66 year reputation as the fence that gives you maximum security at low initial cost and virtually no annual upkeep. Call your local Anchor office for a free estimate, today, or write: ANCHOR FENCE, 6905 Eastern Ave., Baltimore 24, Md



Plants in Baltimore, Md.; Houston, Texas; and Whittier, Cal. Sold direct from Factory Branches and Warehouses in principal cities.

Trenching 7 miles of street, this Jaeger "125" Roto ran two 80 lb. breakers to line-cut and break a 7" top of asphalt over brick—averaged 1200 sq. ft. per 8 hr. day—used only 1½ gals. of fuel per hr.

Jaeger "125" Rotary speeds street work



Jaeger Rotary "600"

Instantaneous air delivery, under close and smoothly modulated control, enables the Roto 125 to maintain 100 lbs. minimum pressure under all demands up to 125 cfm. High efficiency results in slower speed operation, less fuel consumption, longer engine life than any other rotary. See your Jaeger distributor or ask for Catalog JCR5.

THE JAEGER MACHINE COMPANY 505 Dublin Ave., Columbus 16, Ohio

LOADER • PUMPS • MIXERS • TRUCK MIXERS • PAVING MACHINES

An outstanding example of Paddock excellence: 50 meter pool for British Empire Games, Vancouver, B.C.

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OF CALIFORNIA

Serving Municipalities Everywhere

Almost forty years of highly specialized engineering stand back of each pool built and equipped by Paddock of California, no matter where the installation is made. That's because Paddock Pools are built by qualified and reputable builders who are licensed only upon subscribing to Paddock standards of quality... in engineering integrity, skilled construction craftsmanship and the finest equipment known. When calling for bids on public swimming pools, be sure to include the nearest licensed Paddock Pool builder. And for replacement of equipment, send for the Paddock Pool equipment catalog.

Paddock OF CALIFORNIA

14606 ARMINTA STREET
VAN NUYS, CALIFORNIA

Find PADDOCK SWIMMING POOLS in the Yellow Pages

Purchasing

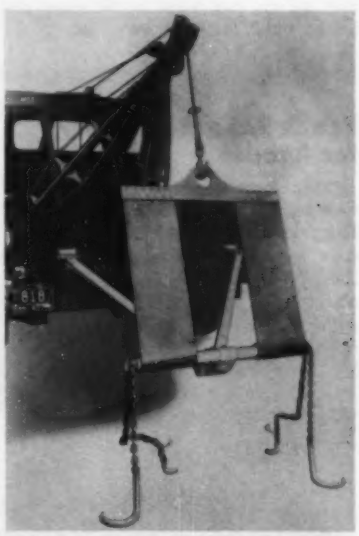
G. Hough Co., 710 Seventh Ave., Libertyville, Ill., or you may use the Post Card in the insert following Page 54. Circle No. 812.

New Towing Sling Protects Cars It Tows

The Ernest Holmes Company, which for the past 43 years has had wide experience in designing and manufacturing wrecker and towing equipment, now announces a new towing sling that is said to "eliminate danger of damage to chrome and painted surfaces during lifting and towing operations."

This Universal Car-Guard Towing Sling was developed in cooperation with automobile manufacturers in an effort to provide a safer means of handling the 1958 cars with their low body styling and air suspension. After considerable research in the field, Holmes engineers have come up with an entirely new principle of lifting and towing which many of the automotive manufacturers have approved and recommended for the safe handling of their 1958 cars. This is made possible by suspension on two high-strength, fabric lifting straps that provide a new type of cushioned safety. The bumper and bumper guards cannot be scarred, bent or defaced due to the fact that no metal comes in contact with these parts.

The Towing Sling is easy to install and can be used efficiently on most any type of wrecker. The sling assembly is perma-

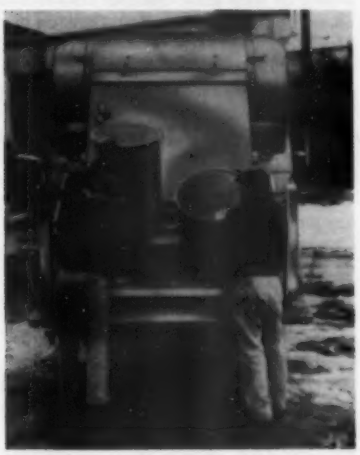


Holmes' new Universal Car-Guard Towing Sling. "V" type spacer bars, lifting straps and tow chain hooks are attached to the wrecker to be always ready for instant use.

nently attached to the spacer bars in towing position, always ready for quick use. When not in use, the sling assembly may be folded against the tail gate and held in place by the support chains.

The Holmes Universal Towing Sling is furnished with telescopic, "V" type spacer bars, heavy fabric lifting straps and two sets of chains with four different types of hook attachments at a price of $200. For further details, write ERNEST HOLMES CO., 2505 E. 43RD ST., CHATTANOOGA 7, TENN., or you may use the Post Card on the insert following Page 54. Circle No. 821.

Faster Refuse Collection



A new, wider hopper is now a feature of all City Tank RotoPac refuse collection units. It permits two men to load simultaneously, and thus assures faster loading of the RotoPac unit, which operates without separate loading and compaction cycles by utilizing automatic continuous compaction. Complete specifications and full description of the new RotoPac units are contained in Booklet RP-2. It is available from PAUL BROWN, CITY TANK CORP., 53-09 97TH PLACE, CORONA 58, N. Y., or you may use the Post Card on the insert following Page 54. Circle No. 820.

Cataphote to Expand Jackson Plant

Plans for expansion of manufacturing and office facilities at the Jackson, Miss., plant of Cataphote Corporation are underway, according to an announcement by Charles E. Searight, company vice president.

Factors responsible for the expansion are increased sales (about 20% greater than that of a year ago), removal of the plastic division from pilot status to full

STOP FRONT DRIVE WEAR, DRAG AND WHINE IN 2-WHEEL DRIVE!

SAVE ON EQUIPMENT . . .
SAVE ON REPAIRS, GAS, TIRES . . .

Install either Warn Lock-O-matics, the hubs that "shift for themselves", or get Warn Locking Hubs and "dial the drive" with your fingers. You'll never again have a 4-wheel drive without Warn Hubs!

WARN MFG. CO., Inc. Riverton Box 4044-ACS Seattle 88, Wash.

GUNITE
The Modern Way...

for Repairing, Constructing, Lining:

- Reservoirs
- Dams
- Filter Plants
- Tanks
- Sewage Disposal Plants
- Stadiums
- Bridges
- Sea Walls
- Swimming Pools

Write for more information, including 48 page "Gunite" booklet.

PRESSURE Concrete Co.
FLORENCE, ALA.
315 So. Court Street

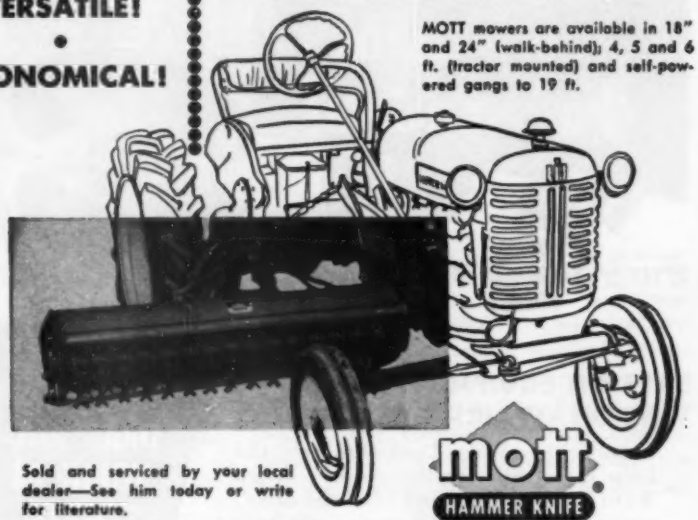
Liberty Life Bldg. CHARLOTTE, N. C.
33 N. LaSalle Street CHICAGO, ILL.
193 Emmet Street NEWARK 5, N. J.

ONE MOWER... for all mowing jobs!

It's
SAFE!
•
VERSATILE!
•
ECONOMICAL!

No danger of flying sticks, stones or other debris. Ideal for mowing areas where children are present—such as parks, parkways, playgrounds . . . and even vacant lots. It costs no more to buy the best! The unique MOTT "Hammer Knife" mower, rugged and simple in design, gives years of useful, trouble-free service. This means economy for you! First cost economy . . . maintenance economy . . . and operating economy!

MOTT mowers are available in 18" and 24" (walk-behind); 4, 5 and 6 ft. (tractor mounted) and self-powered gangs to 19 ft.



Sold and serviced by your local dealer—See him today or write for literature.

mott
HAMMER KNIFE
MOWERS

C. W. MOTT • 4017 Eberly Ave.
Brookfield, Ill.

Home-Lite Portable Blower

Gasoline Engine Driven
Model G—2,000 CFM

Ideal for Public Works Contractors, Fire, Electric and Water Departments.

9 inch inlet. 11½ inch outlet. Flexible exhaust, pressure type. Can be used to either furnish fresh air or to blow odors and gases out. NEW Government Surplus. Cost in excess of $200.00. In original crates. Shipping weight 145 lbs. Net weight 80 lbs.

$49.50 Less 2% Discount For Cash

F. O. B. FORT WORTH, TEXAS
Write for quantity prices on orders over 6.

SATISFACTION GUARANTEED

L & W SURPLUS SALES
909 E. Belknap Fort Worth, Texas

"TRAFFIC SENTRY"

THE PORTABLE TRAFFIC SIGNAL...

Place Anywhere Needed

then roll, haul or truck to any other spots needing full traffic signal protection.

SENTINEL OF SAFETY

Write us at once for installations and complete specifications.

Dealer Inquiries Invited

PORTABLE TRAFFIC SIGNALS, INC.
1615 So. Broadway, Los Angeles 15, Calif.

Purchasing

manufacturing operation, and need of additional space to house the sales, direct mail advertising-dealer service and distribution control departments, recently transferred from the Toledo plant to Jackson.

When construction is completed, Cataphote will have 25,000 additional feet of manufacturing space and 2,500 square feet for its offices.

The CATAPHOTE CORPORATION is nationally and favorably known as a leading manufacturer of Cataphote reflective beads, Cataflex reflective coating, Cataline reflective striping, Catatherm reflective plastic striping, traffic signs and street name signs. Illustrated literature about their products can be obtained by writing to their main office at TOLEDO 10, OHIO, or by using the Post Card on the insert following Page 54. Circle No. 816.

Pickup Truck Has More Load-Carrying Capacity

Fifty per cent more load space for hauling bulky cargoes is provided by Chevrolet's advanced style Fleetside pickup trucks, which have boxes more than 2 feet wider and slightly deeper than other models.

The Fleetsides are offered with either 6½ or 8-foot box lengths on two wheelbases in the ½-ton series and with an 8-foot box in the ¾-ton model. Both boxes have an inside width of 6 feet 3 inches and are 19⅛ inches deep, an increase of 1½ inches. Capacity of the 6½-foot units is 59½ cubic feet, a gain of nearly 20 cubic feet; the larger Fleetside box has a 75⅝-cubic foot capacity, a gain of more than 25 cubic feet. These significant gains in dimension have been achieved by adding only 4 pounds and 22 pounds, respectively, to vehicle weight.

Floors are of durable seasoned hardwood with flush-type steel skid strips. They are not subject to corrosion, are quieter and provide safe footing wet or dry. For additional information, write CHEVROLET MOTOR DIVISION, GENERAL MOTORS CORP., GENERAL MOTORS BLDG., DETROIT 2, MICH., or you may use the Post Card on the insert following Page 54. Circle No. 795.

Purchasing News

Appleton Branch Becomes District Sales Office

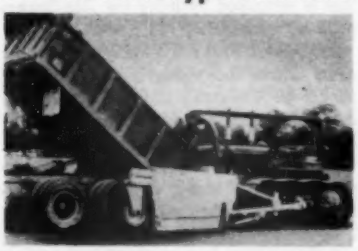
Allis-Chalmers Mfg. Co., Milwaukee, Wis., has announced that the Appleton office, formerly a branch of the Milwaukee district office, has been made a district sales office. The territory served by the Appleton district wll be the same as that formerly served by the Appleton branch. Harold L. Gruehn will continue as manager for the district.

Licensing Rights Accepted

Pacific Flush Tank Company and Ralph B. Carter Company have settled their lawsuits for alleged infringement of U. S. Patents Nos. 2,640,027 and 2,768,137. The suits were brought by Pacific Flush Tank Company against Buffalo Sewer Authority, Hendrich Construction Company and Ralph B. Carter Company.

Under the terms of agreement, the suits have been withdrawn, and Ralph B. Carter Company, which furnished the gas recirculation equipment for the Buffalo plant and defended the suits, has accepted licensing rights under aforementioned patents and under U. S. Patent No. 2,768,136.

Paver Attachment for Crawler-Type Tractors



Blaw-Knox P-160 base paver attachment.

In small and medium-size communities where limited budgets often prohibit the purchase of a complete paving unit, the Blaw-Knox P-160 should prove particularly advantageous. It is capable of doing a substantial amount of maintenance paving work and possesses the portability often desired in municipally-owned equipment. Most important, this attachment actually does the work of a base paver.

The P-160 base paver attachment will spread stone, slag, gravel, soil and pug mix aggregates up to 400 tons per hour. Manual screw-type controls can be set to spread from 1 to 20 inches deep. The machine's normal 10-foot, 10-inch width can be blocked off to 7 feet, 2 inches, and adjustable hinged hopper wings permit a maximum spreading width of 16 feet. The hopper is V-shaped, 20 inches high, and of large size to permit practically any model of dump truck to back up and discharge easily.

The unit's frame is made up of electrically welded plate, channel, angle and tubing, and has a total weight of 6,100 pounds. The P-160 attachment is 11 feet, 2 inches wide. For additional information, write BLAW-KNOX CO., 300 SIXTH AVE., PITTSBURGH, PA., or you may use the Post Card on the insert following Page 54. Circle No. 799.

Two-Way Radio in One Minute

Municipalities will find this completely self-contained portable-mobile unit to have adequate power for many 2-way communications applications. In just about one minute it can be placed in operation, merely by attaching a clip-on window antenna and plugging the power cable into a vehicle's cigarette lighter socket.

Speakers are built-in and the latest type of transistor power supplies eliminate vibra-

SYMBOLIC "FOUNTAIN SQUARE"

Heart of Cincinnati is Fountain Square. Its ever-flowing water memorializes the love and respect of a businessman and civic leader for his brother-in-law, Tyler Davidson. Since 1871 this memorial has been a landmark amidst the busy city.

In many interesting locations you'll find *FERRO* signs . . . visible by day or by night; permanent porcelain enamel fused on finest steel. Fully embossed.

***FERRO* signs are manufactured by Ferro Enameling Company, only in its own factory. Processing, embossing and porcelain enameling are carefully and completely performed under one roof, to produce an entirely reliable and uniform sign.**

On any street, road or highway, *FERRO is the sign of good government.*

FREE BOOKLET

There are centuries of difference between genuine *porcelain enamel* and "baked," "paint" or other substitute "enamels." *Genuine porcelain enamel* lasts for centuries; won't "weather," won't fade. Get the facts. Write for free illustrated leaflet and with complete details. TODAY, fill in the coupon, paste on a postcard and mail.

FERRO ENAMELING COMPANY

Member: Porcelain Enamel Institute

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Please send me free leaflet and other information about your porcelain enamel signs.

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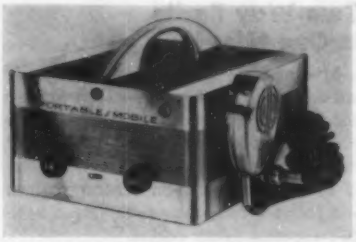
*Title*_____

*Office or Dept.*_____

*Street*_____

*City*_____ *Zone*____ *State*____

Purchasing News



Portable - Mobile, two-way radio unit made by Industrial Radio Corp.

tor problems and provide more efficient operation and less battery drain. An extremely sensitive receiver and high performance transmitter of approximately 10 watts output are housed in a chrome-plated steel case that is 8 inches x 9 inches x 5 inches; weight is 15 pounds.

The Portable-Mobile will be available in high and low band models. Also, models with 3 watts input will be available to qualify for low power industrial services. All units are designed for 12-volt operation.

For complete information and specifications, write to INDUSTRIAL RADIO CORP., 428 N. PARKSIDE AVE., CHICAGO 44, ILL., or you may use the Post Card on the insert following Page 54. Circle No. 817.

New Front-End Loader for Utility-Type Tractors

A new industrial front-end loader has been designed by A. C. Anderson, Inc., for use with utility-type wheel tractors. Called the Model E, it features a system of bucket roll back and parallel linkage of its twin hydraulic lift arms, which enables complete bucket filling and allows free roll back under load without pulling away from the bank or dirt pole being moved. Self-cleaning dumping when the bucket is rolled to the dump position is also assured.

The all-mechanical parallel linkage, said to be unique for loaders built for small tractors, allows the operator to keep the load closer to the tractor and provides more complete use of hydraulic power for breakaway and carrying loads level. This, plus the low center of gravity of the loader frame, permits the operator to carry loads at any bucket height—high or low.

A built-in strainer and a circuit cushion protect the hydraulic system of the Model E. The coiled spring cushion automatically levels off harmful peaks of pressure built up by jolts and sudden stops of pistons and rams under load. The hydraulic system is simplified by using the side frames of the "reservoir".

High-sided trucks and other carriers are easily within the loading clearance of the Model E. Clearance under the bucket in dumped positition is 8 1/8 feet. Overall height of the bucket raised is 11 1/3 feet.

The Anderson universal mounting frame transforms the Model E into a multiple-use unit. Lift booms, work platforms, fork lifts, bulldozer blades and snowplow blades can be attached with no special tools. For additional information on the new Model E loader, write A. C. ANDERSON, INC., DEPT. A-101, P. O. BOX 391, WILDWOOD, N. J., or you may use the Post Card on the insert following Page 54. Circle No. 783.

Now . . . faster, economical shade tree protection with the NEW John BEAN 300 ROTOMIST

today's biggest capacity mist sprayer delivers 60,000 cubic feet of air per minute

Designed for greatest rate-of-work efficiency, the new John Bean 300 Rotomist saves money and manpower on large-scale shade tree protection and sanitation spraying. You spray more trees per day even under adverse wind conditions, with the Rotomist's straight-through air delivery, big volume 40-inch axial flow fan. Finger-tip hydraulic control levers for rotating unit 360° and adjusting discharge outlet to desired vertical position. Handy foot pedal controls spray discharge. Big capacity 300 gallon bowl-shaped tank with mechanical agitation. Spring mounted, tandem wheel trailer with electric brakes.

there's a John BEAN ROTOMIST to fit your specific needs

MODEL 75
75 gallon tank
19,000 cubic feet of air per minute

MODEL 100
100 gallon tank
28,000 cubic feet of air per minute

Ask for details on NEW 60 GPM Hydraulic Sprayer

fmc FOOD MACHINERY AND CHEMICAL CORPORATION

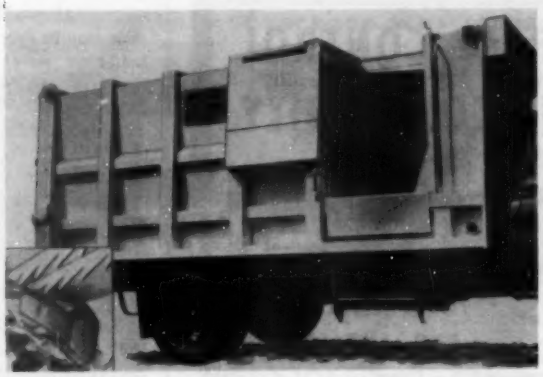
John BEAN LANSING 4, MICHIGAN SAN JOSE, CALIFORNIA

Division of Food Machinery and Chemical Corporation

Send me: [ ] New 1958 Rotomist & Hydraulic Sprayer Catalog [ ] Mist Sprayer Comparison Table [ ] Facts on Dutch Elm Disease Control [ ] Mosquito Control Costs

ATTACH COUPON TO CARD OR LETTERHEAD — GIVE NAME AND ADDRESS

Improved Packer-Type Refuse Collection Body



The 1958 packer-type garbage and refuse body placed in production by Hydro E-Z Pack Division of Hercules Galion Products, Inc., of Galion, Ohio, is said to offer "municipalities and private contractors a substantial savings in route pick-up time and a reduction in number of trips to the dump."

The new models feature two saw-tooth retainer bars extending the length of the cab roof. These bars hold the packed load in place after the packer plate has been withdrawn, keeping the loading area clear and reducing the number of strokes of the platen.

An obstruction-free floor, complete watertight body, two-side loading and greater compaction pressure contribute to bettering the performance of these packer-type units.

The driver-controlled hydraulic mechanism has few moving parts, and operates entirely in front of the packer plate. The body does not lift to unload. The Hydro E-Z Pack is available in standard sizes of 16, 20, and 24 cubic yards. For additional information, write to HERCULES GALION PRODUCTS, INC., GALION, OHIO, or, if you prefer, you may use the Post Card on the insert following Page 54. Circle No. §13.

Cuts Water, Gas Pipe

The CL-12, an automatic drilling machine for making cuts from 2 inches through 12 inches in any type of pipe, has been announced by the Mueller Co. Intended primarily as a water distribution cutting machine, it can also be used on gas distribution systems and in general plant service where pressure and capacity applies.

Such features as an automatic direct-reading tool position and feed travel indicators and automatic disengagement of the tool feed have been incorporated to facilitate operation. The tool position indicator shows the position of the pilot drill and shell cutter in relation to their fully-retracted position. As the cut progresses, the indicator *adds*, always showing the total distance the tools have traveled.

The feed travel indicator is easily set for the amount of travel required for a desired cut. As the cut progresses, the indicator *subtracts*, showing the amount of cut or travel remaining in automatic feed. When the pre-set feed travel in automatic feed is reached, the feed is automatically disengaged and the machine idles. Whenever the maximum 25-inch travel of the machine is reached the feed or travel is also automatically disengaged. This prevents over-travel of the boring bar and possible damage to the drilling machine. When not cutting, the boring bar may be rapidly advanced or retracted by hand.

Tungsten-carbide tipped shell cutters are used with the CL-12, and new boring bar packing is spring-loaded to eliminate packing adjustments. Working parts are enclosed in an oil-filled galvanized steel case. Maximum working pressure of the CL-12 is 250 psi at 100° F.; maximum working temperature, 500° F. at 150 psi. The ma-

SAVE UP TO 50%

with PLYGLAZE

HIGH-DENSITY OVERLAID PLYWOOD

SIGN BLANKS

- Finest sign base material available. Stiffer, stronger, more durable than steel or aluminum.
- Costs* ⅓ to ½ less than aluminum. (24" STOP blank, for example, is only $1.80 fob Tacoma).
- Hard plastic-like overlay needs no paint protection. Cuts finishing costs. Reflective sheeting may be applied direct; no prime coat needed.
- Overlay is impervious to moisture. Provides excellent paint base where special colors are desired.
- Available in all standard sign shapes and sizes. Colors: black, amber. Also full-size panels up to 4' wide, 24' long.

PlyGlaze withstands vandalism damage that would knock metal out of service.

*For quotations or other data, write:
ST. PAUL & TACOMA LUMBER CO.
subsidiary St. Regis Paper Co. / Dept. AC, Tacoma 1, Wash.
Please send following information about PlyGlaze sign blanks.
☐ Cost Data ☐ Use Manual ☐ Samples
Name
Firm or Dept.
Address
City Zone State

LOWEST COST SPACE CONTROL
THROUGHOUT THE COMMUNITY

TIFA

Mosquitoes, Flies and Other Insect Pests Destroyed on Contact

On the dump, over pools, in suburbs, play areas, stockyards, TIFA gets the kill every time . . . at the lowest operating and maintenance cost. TIFA rapidly covers large areas with true clean fog, permeates smallest crevices, envelops and destroys all insect pests. This efficiency with newest or older type insecticides, gives you a better insect control program for your community.

TODD INSECTICIDAL FOG APPLICATOR

BEST by TEST for over 13 years in Community Fly and Mosquito Programs

Carrying underwriters' Listing Seal MH 4162

Write for illustrated folder with details and official comments.

PRODUCTS DIVISION

TODD SHIPYARDS CORPORATION

HEADQUARTERS: Columbia and Halleck Streets, Brooklyn 31, N. Y.

PLANT: Green's Bayou, Houston 15, Texas

B IS FOR Burke

and its NEW

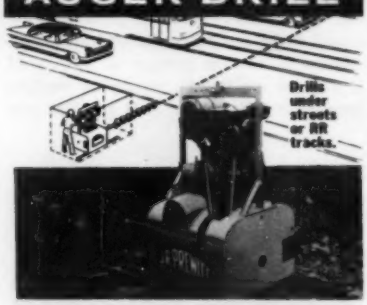
SPACE-SAVER SLIDE

All the fun of other slides yet *JUST ¼ THE SPACE!* An ingenious all metal design of utmost safety and low upkeep. Bedway is stainless steel. Other parts finished with baked enamel in bright colors.

COMPLETE LINE OF PLAYGROUND EQUIPMENT

The J. E. Burke Company
FOND DU LAC, WISCONSIN
NEW BRUNSWICK, NEW JERSEY

LOW COST—LIGHT WEIGHT
ONE MAN OPERATED
PREWITT
DRY BORE HORIZONTAL
AUGER DRILL



DRILLS 2½ " to 20" DIAMETER — 50' to 100' LONG—Cut labor, overhead and maintenance cost with the amazing new Prewitt Horizontal Auger Drill. Requires ground opening of only 4' x 10'—easily operated by one man. Light weight unit can be lowered in operating position by back hoe. Unit is self contained . . . requires no air compressor, generator, or water. Eight auger sizes are available from 2½" to 20" in diameter. Drills holes from 50' to 100' long . . . holds straight line. Easily reversed for retracting augers.

J. R. PREWITT AND SONS, INC.

DEALER INQUIRIES INVITED
Write, wire or phone for complete information

J. R. PREWITT & SONS

Pleasant Hill, Mo. Dept. 501 Phone 40

Purchasing

chine may be operated by hand with ratchet handle or power-driven with a Mueller H-601 Air Motor or Mueller H-602 gasoline engine drive unit.

For additional information, write MUELLER CO., 512 W. CERRO GORDO ST., DECATUR, ILL., or you may use the Post Card on the insert following Page 54. Circle No. 815.

New Ladder Truck

The Hackensack, N. J., Fire Department now has 12 vehicles with the addition of an 85-foot aerial extension ladder. This apparatus is made up of a 142-inch wheelbase International tractor with fifth wheel, and a 48-foot long trailer that supports the tower. Power is provided by a 165-horsepower International Red Diamond engine.

According to Hackensack's Fire Chief, W. C. Frodsham, the tower's heavy, ladder-elevating gear rides directly over the truck's fifth wheel at the trailer's front end.

In addition to the aerial ladder, the trailer carries 250 feet of sectionalized ground ladder in lengths from 8 to 24 feet. Other equipment includes hand and large-beam searchlights, a foam generator, hand fire extinguishers, inhalator, ladder pipe, acetylene cutting torches and a life net.

For additional information, write CONSUMER RELATIONS DEPARTMENT, INTERNATIONAL HARVESTER CO., 180 N. MICHIGAN AVE., CHICAGO 1, ILL., or you may use the Post Card on the insert following Page 54. Circle No. 781.

Hackensack's newest fire truck alongside training tower.

Purchasing

E. G. Cole, Jr. Heads R. D. Cole Mfg. Co.

E. G. Cole, Jr.

At a meeting of the R. D. COLE MANUFACTURING COMPANY on March 22, the directors elected E. G. Cole, Jr. as President and Treasurer, succeeding his late father, E. G. Cole, Sr. The directors also named the following officers: Hamilton C. Arnall, vice president; T. K. Barron, secretary; J. M. Trapnell, vice-president engineering; W. E. Shefelton, vice-president production; John M. Perryman, vice-president sales.

R. D. Cole Manufacturing Company has been in continuous successful operation for 104 years, and serves a wide-range of industry, municipalities and government agencies throughout the United States and foreign countries. Known primarily as plate fabricators, the company designs and manufactures carbon steel, stainless, alloy and aluminum plate work, tanks, pressure vessels, and fabricates and erects elevated tanks, standpipes, reservoirs, gas holders and special equipment. The company also handles a complete line of building materials and supplies.

Lightweight, Hydraulic Trench Digger

The Arps Corp. has developed a one-man operated trencher for municipalities, utilities and contractors requiring a low-cost, heavy-duty trenching machine for a wide variety of jobs.

This new unit is called the Arps Trench-Devil Model M. It can be easily skid-loaded on pickup trucks or small trailers, or it may be transported for short distances under its own power at 2½ miles per hour. Weight of the unit is 815 pounds.

The Model M is a self-propelled unit. Hydraulic drive permits instantaneous re-

A WORD TO THE WISE *from* **WALLY the WITT**

*Everyone was surprised but ME!**

"When you're excavating ancient ruins, that's what you'd expect to find—Ruins!

"But not those Witt Cans! They always come out looking like new. They're really tough.

"'Course, I know how well they're made."

***PROVED BEST BY TEST**

The Pittsburgh Testing Laboratory, a National Research Authority, has tested Witt and competitive cans on their respective ability to "stand the gaff."
In the vertical compression test, Witt cans proved 50% to more than 300% stronger than competitive cans. In the horizontal compression test, Witt cans proved 100% to more than 400% stronger.
Witt cans *definitely* last longer!

"ORIGINATORS OF THE CORRUGATED CAN"

WITT Cans

THE WITT CORNICE COMPANY, 4455 STEEL PLACE, CINCINNATI 9, OHIO

keep 'em on the job with IGLOO

on the spot cool water pays off for the Memphis, Tenn., Light, Gas and Water Division field units.

More men on the job more of the time is the result of adding IGLOO water coolers on your construction jobs. The workers like IGLOO best because—

• It's CRYSTALINED, keeps liquids pure • It has round sanitary bottom, easy to clean • It has recessed dripless spigot • Its insulation qualities are 18% greater • It's stronger and lasts longer.

Keep 'em on the job with IGLOO

ask for it by name IGLOO CORPORATION
P O BOX 8227 • MEMPHIS 4 TENN

KOHLER ELECTRIC PLANTS

Make jobs easier with portable power

Model 1.5M25, 1500 watts, 115 volt AC with cart. Manual starting. 2500 watt AC models also available.

Jobs move faster with a compact Kohler electric plant to operate hedge trimmers, chain saws, grass shears, carpenters' saws, drills, electric spades, pipe threaders and cutters.

The Kohler line includes models for trucks, street repairs, police and fire departments, civil defense. Automatic stand-by plants for use when central station power fails. Sizes from 500 watts to 50 KW, gasoline; 10KW to 50 KW, diesel. Write for folder A-21.

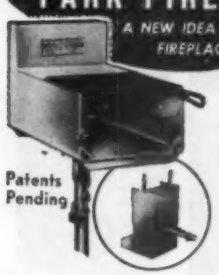
KOHLER CO. *Established 1873* KOHLER, WIS.

Enameled Iron and Vitreous China Plumbing Fixtures • Brass Fittings
Electric Plants • Air-cooled Engines • Precision Controls

KOHLER OF KOHLER

KAY PEDESTAL PARK FIREPLACE

A NEW IDEA IN PARK FIREPLACES



Patents Pending

Theft Proof
•
Sturdy Steel Construction
•
Long Life
•
Convenient Operation

Model A-14 shown
Model B-14 all grill top

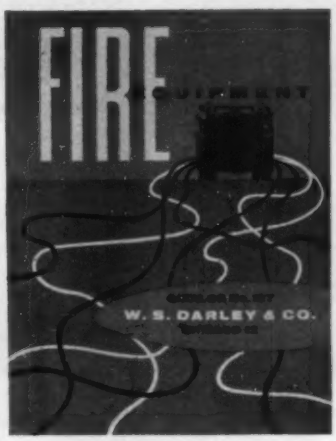
- Low Installation Cost
- Adjustable Grill with Steel Handles
- High Position for Wood Low for Charcoal
- Waist High Cooking Height
- Padlocks to Post
- Large Cooking Area - 14" x 21"
- Two Firebox Weights Available
- Swivels for Best Draft Control
- Easily Removed for Storage

Attractive discounts for quantity orders.

Write TODAY for literature and prices.

KAY Enterprises JANESVILLE, IOWA

NEW CATALOG!



WRITE TODAY FOR 100-PAGE FIRE EQUIPMENT CATALOG

SPECIFY YOUR TITLE ON YOUR REQUEST

W. S. DARLEY & CO.
CHICAGO 12

Purchasing

Arps Trench Devil, Model M.

versal of direction while digging, making it possible to dig vertically against a wall. It also allows immediate speed change throughout the entire digging range of the unit. Controls for the digging chain clutch, conveyor clutch and hydraulic drive clutch are conveniently located for the operator.

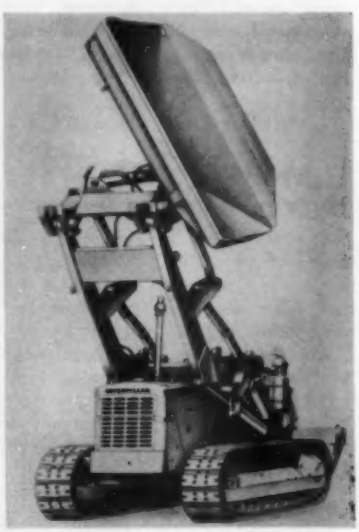
One-side dirt delivery is accomplished by a rubber-belted conveyor. Dirt is kept as close to the trench as desired by an adjustable dirt deflector on the conveyor. To achieve greater ease in loading, the conveyor belt may be removed.

For additional information, write the ARPS CORP., NEW HOLSTEIN, WIS., or you may use the Post Card on the insert following Page 54. Circle No. 810.

Traxcavator Side Bucket

A 2¼-cubic yard side dump bucket attachment, which has proved itself especially useful on Caterpillar's No. 955 and 933 Traxcavators for stockpile loading, trench or basement backfilling, excavation of broken or loose material and snow and ice removal, is now available for the company's largest Traxcavator, the No. 977.

The No. 977 Traxcavator, when



equipped with side dump bucket, will be able to load in confined areas, and loads can be spotted better towards the front of transporting truck boxes to control rear axle loading.

Installation and removal of the side dump bucket is done quickly. The same pins, bolts and nuts which mount the standard bucket are used. And no interference of other Traxcavator attachments is caused when equipping the No. 977 with this bucket. A lever, mounted to the right but in line with standard bucket levers, controls the side bucket attachment. A third valve, on the hydraulic tank, is used to control side-dumping motion.

Lockout-kickout, 40-degree ground-level tilt back and one-hand bucket control, standard Traxcavator features, are retained when using the side dump bucket. For additional information, write CATERPILLAR TRACTOR CO., PEORIA, ILL., or you may use the Post Card on the insert following Page 54. Circle No. 819.

Rolls Within Half Inch of High Objects

Completion of on-the-job testing of more than 200 Gledhill rollers designed to operate within ½ inch of almost any obstacle is announced by The Gledhill Road Machinery Co., Galion, Ohio. With this roller, municipal street construction and maintenance crews will be able to eliminate hand tamping near walls, poles, buildings and other high objects, a procedure which is time-consuming and costly.

The roller has single lever control with constant mesh transmission, and is powered by a Wisconsin AENL 9.2-hp air-cooled type engine. It has proved to be an efficient worker on steep inclines, and is available with an electric or rope starter. Both the drive roll (30½ inches in diameter x 36 inches) and the steering roll (20½ inches in diameter x 30 inches) turn on Timken bearings. When completely water filled, the drive roll exerts 85 pounds of pressure per lineal inch; the steering roll, 30 pounds per lineal inch. Sprinkler mats are standard on each roll. Twin cleaning scrapers, located below the roller frame to permit easy cleaning, are held against the rolls under adjustable spring tension.

Overall length of the Gledhill roller is 7 1/6 feet; width is 3 feet 5 inches. Weight when empty is 2,500 pounds; when water-filled, 5,450 pounds. Working speeds range from ½ to 2 mph. The roller has been equipped with a 120-gallon sprinkler tank.

For additional information, write the company, or you may use the Post Card on the insert following Page 54. Circle No. 814.

Opens Iowa Branch Office

Reda Pump Company, Bartlesville, Okla., has opened a new branch office at 2909 Lafayette, Waterloo, Ia. The branch will not only carry a complete stock of Reda pumps and equipment, but will contain facilities for repair and exchange of equipment. Paul DeGarmo will be in charge.

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About People

Henry J. Barbour, recently Manager of Advertising and Public Relations for **Fairbanks, Morse & Co.,** will join Donahue & Coe's Chicago staff on June 1. He will serve as account supervisor and also as a specialist on trade, industrial, engineering and class media.

H. J. Barbour

Mr. Barbour, who has been Manager of Advertising and Public Relations with Fairbanks, Morse & Co. for a number of years, joined that company in 1924 as Advertising Manager of its Dealer Division at the Beloit, Wis., works. In 1928 he was transferred to the Chicago headquarters where he became Manager of Public Relations. In 1954 he was promoted to Manager of Advertising and Public Relations, which position he has held until his present change.

R. A. Olen **M. E. Ash**

George E. Mallinckrodt, chairman of the Board of **Four Wheel Drive Auto Company,** has announced that Robert A. Olen, president of FWD since 1952, has been elected vice chairman of the company's Board of Directors and that Maurice E. Ash has been elected president of the Clintonville, Wis., truck-manufacturing firm.

Mr. Ash has been serving as vice president of Paradynamics Incorporated, St. Louis, Mo., the corporation which purchased controlling stock interest in FWD last January.

R. J. Dineen, representative for **Allis-Chalmers** Industries Group Central Region, has been appointed manager, General Products Division sales, Central Region, with headquarters in Cleveland, Ohio.

Two changes in personnel at the **Minneapolis-Moline Co.,** Minneapolis, Minn., have been announced by Matt Carroll, general sales manager: Clem A. Kiener, regional sales manager, Columbus, Ohio,

has been named assistant general sales manager at the Hopkins, Minn. general sales office of the company; and Roger R. Hipwell, product manager, has been named manager of advertising and sales promotion of the company.

Huber-Warco Co., Marion, Ohio, announces the appointment of two distributors, the one Berry Bros. Machinery Co., Dallas, Texas, and the other Moody Equipment and Supply Co., Little Rock, Ark. Both concerns will handle H-W motor graders, tandem rollers, 3-wheel rollers and maintainers.

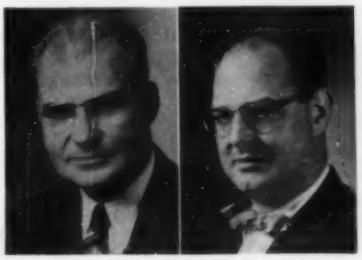
Raymond M. Waggoner, executive vice president of **Hubbard & Company,** has announced the appointment of Charles A. Liming as sales manager of the Electrical Apparatus Division. In addition to lighting arresters, fuse cutouts, and other protective equipment, the company manufactures Pole Line Hardware, Tools and Hapco Aluminum Lightning Standards and Brackets. Mr. Liming will headquarter at the new Hubbard Electrical Research Laboratory at McCook, Ill., near Chicago.

C. A. Liming

William D. Lease has been elected to the Board of Directors of **Athey Products Corp.** and executive vice president of the corporation. In his position as vice president of sales, to which he was named in 1954, Mr. Lease was in charge of the company's sales efforts throughout the world. Prior to his activities in the Sales Department, he held positions in various departments as plant engineer and manager of research and development.

W. D. Lease

The sales management team in the Industrial Division of **The Oliver Corp.,** Chicago 6, Ill., has been strengthened by the appointments of J. M. Tucker as a special consultant to advise management in the development of policies geared to expanding industrial equipment market, Edward Kruse as central regional sales manager with headquarters in Cleveland, Ohio, and R. A. Dole as eastern regional sales manager in charge of the company's industrial division sales in the area extending from the Canadian provinces south to Virginia.



G. N. Proctor H. M. Appleton

The appointment of Herbert M. Appleton as assistant to George N. Proctor, vice president and general manager, has been announced by the **Permutit Company,** a division of Pfaudler Permutit Inc. Mr. Appleton recently had been made manager of the Industrial Engineering Department and, in addition to his new duties as assistant to the general manager, will retain this former responsibility for a temporary period.

W. D. Taulman & Associates, of Atlanta, Ga., have been appointed exclusive Southeastern representatives of **B-I-F Industries, Inc.,** and of the company's three divisions — Builders-Providence, Inc., Proportioneers, Inc., and Omega Machine Co. The Taulman organization, which also has an office in Florida, has represented Builders-Providence and Omega in the water and sewage field for some time, and added Proportioneers to its representation on March 11, 1958. Now all three divisions will be represented in both the water and sewage and the industrial fields, effective April 15.

Taulman will have complete responsibility for the sales and service of B-I-F's complete line of process instrumentation and equipment for positive control of materials in motion. For engineering advice, inquiries may be directed to W. D. Taulman & Associates, 415 East Paces Ferry Road N. E., P. O. Box 12286 (North Side Branch), Atlanta 5, Ga.

According to an announcement by Marc B. Rojtman, executive vice president of **J. I. Case Co.,** Racine, Wis., Frank J. Palermo has been named to the newly-created post of Director of Manufacturing. Mr. Palermo will have broad authority for the coordination of all manufacturing activities between the companies' eight plants and the Case home office.

Caterpillar Tractor Co., Peoria, Ill., has announced the election of Charles A. Woodley, executive vice president, to the Board of Directors of the company. Mr. Woodley was named general factory

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manager at Peoria in 1950 and was promoted to plant manager in 1953. He was elected a vice president in October 1954, and elevated to executive vice president last October.

R. A. Cummings F. W. Wemmerus

From **Ludlow Valve Mfg. Co., Inc.,** Troy, N. Y., comes word of the election of Richard A. Cummings to the position of vice president in charge of manufacturing. Mr. Cummings was formerly chief engineer at Ludlow. He fills the position left vacant by the resignation of Edwin A. Weinberg. Named to fill the post left vacant by Mr. Cummings is Fred W. Wemmerus, former assistant superintendent of shipbuilding for the United Fruit Co. with 22 years' experience in design and supervisory engineering for heavy industry.

Two announcements have been received from **Nordberg Mfg. Co.,** Milwaukee, Wis., the one that the company has established a Great Lakes district office in Cleveland, Ohio, and the other that Philip Wallach has been appointed the new district manager of the company's Great Lakes territory.

Frank A. Sullivan, sales manager of Industrial and Commercial Lighting for **Wheeler Reflector Company,** Boston, Mass., has been appointed general sales manager of Industrial and Commercial Lighting for both Wheeler Reflector Company and Fullerton Mfg. Corp., newly combined divisions of Franklin Research Corp., Boston, Mass.

Edmund W. Riemenschneider, vice president in charge of engineering at **The Union Metal Manufacturing Co.,** Canton, Ohio, died unexpectedly March 6. Affiliated with the company since 1926, when he was given full responsibility for all research and development engineering in connection with the company's new products and operations.

Hugh F. Kennison has been elected a director of **Lock Joint Pipe Co.,** East Orange, N. J. He is recognized throughout the water works industry as an authority on pipe design, with particular emphasis on the field of prestressed concrete for pressure pipe construction, and has been with the company's engineering department since 1939.

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Send copy for ads to the Production Department, THE AMERICAN CITY, 470 Fourth Ave., New York 16, N. Y. Closing date: 15th of preceding month.

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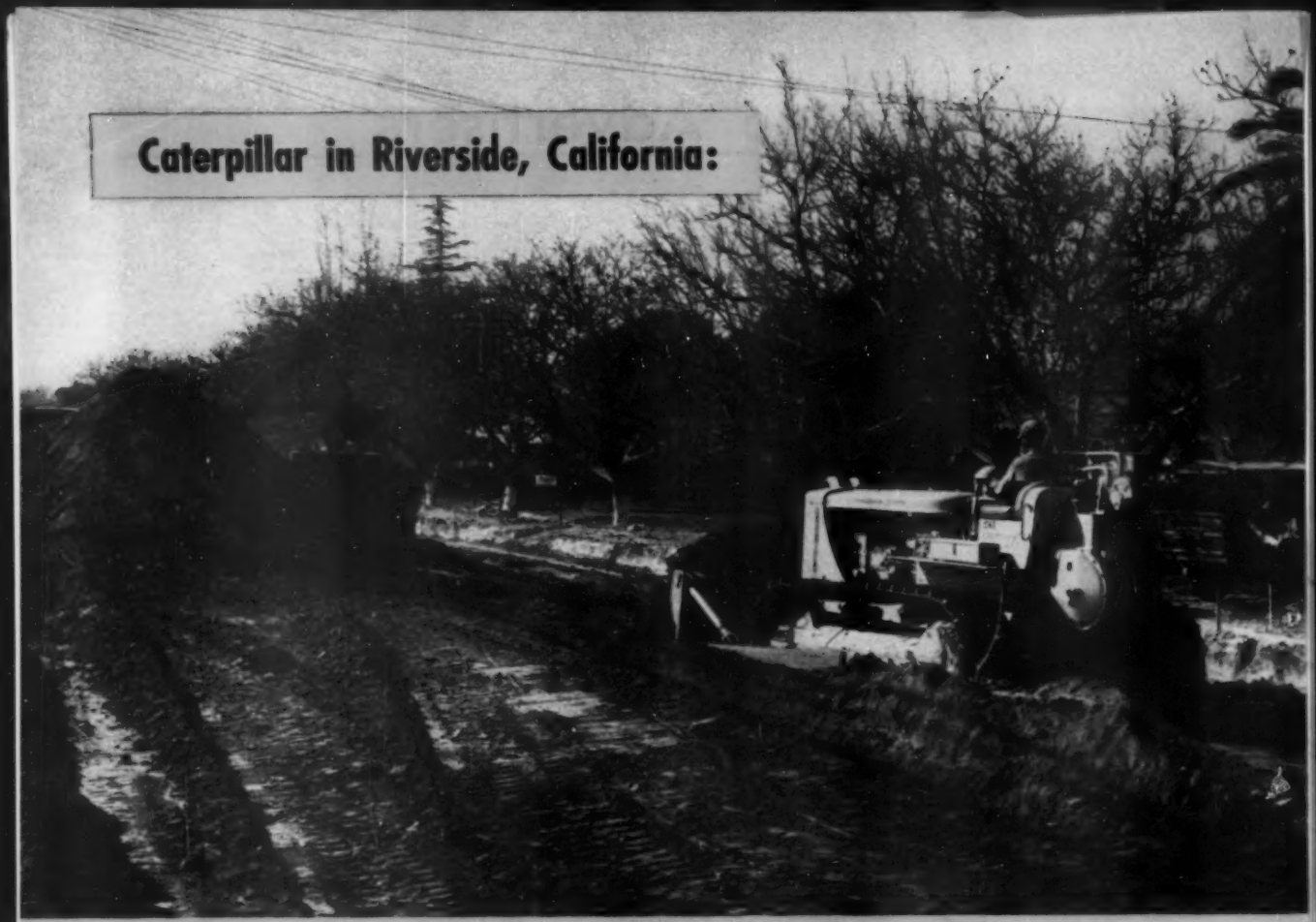

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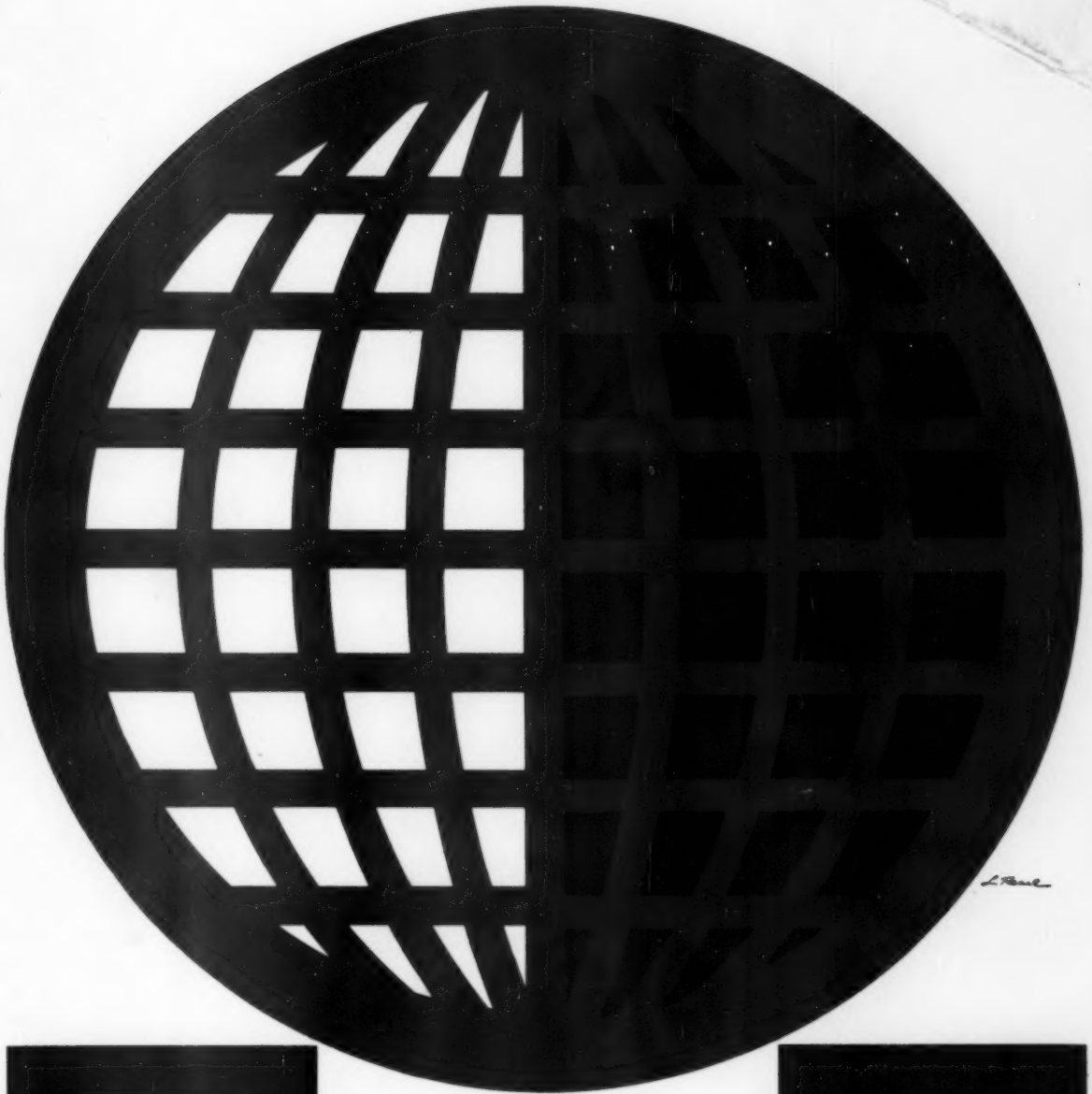

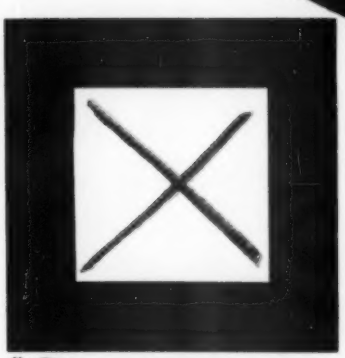

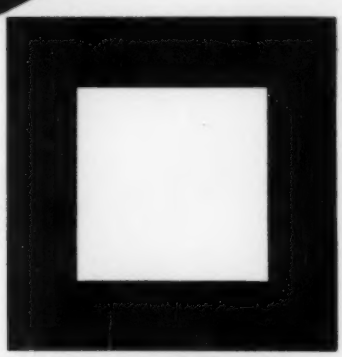

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